CALIFORNIA
OIL WORLD
and Petroleum Industry

PUBLISHED TWICE A MONTH — ENGINEERING — TECHNOLOGY — LATEST NEWS

FIRST ISSUE
JULY 1943
VOL. 36 NO. 13
WHOLE NO. 1636

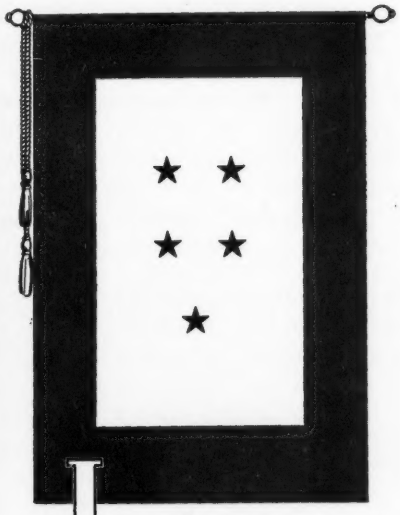
UNITED STATES TREASURY DEPARTMENT

For distinguished services rendered in behalf of the War Savings Program this citation is awarded to

California Oil World & Petroleum Industry

Given under my hand and seal on **June 12, 1943**

Henry Morgenthau Jr.
SECRETARY OF THE TREASURY



In the service of our country

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PETROLEUM PUBLISHERS, INC. 939 SO. BROADWAY BLDG.
LOS ANGELES, CALIFORNIA - MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS

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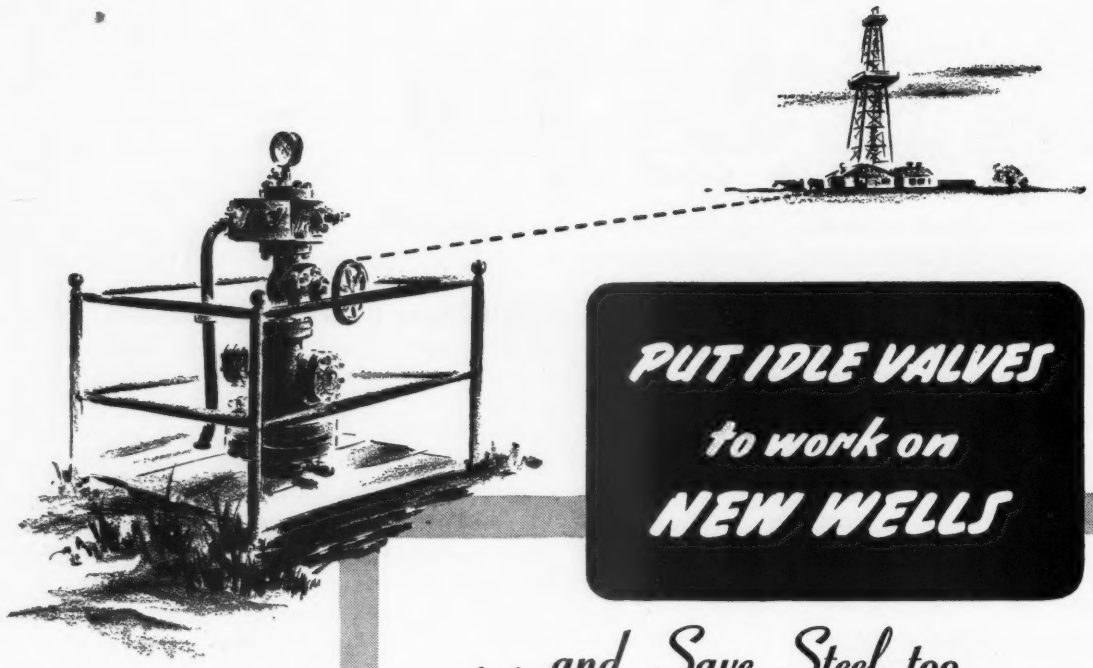
California Oil World and Petroleum Industry is published twice a month at 1009 in the 939 So. Broadway Bldg., Los Angeles, California. Entered as Second-class Matter January 16, 1937, at the post office at Los Angeles, California, under the Act of March 3, 1879. Subscription price $1 per year in U. S. and Possessions, $2 in foreign countries, including Canada. Member of the Audit Bureau of Circulations.

July 14th, 1943

Telephone Number TUcker 2571



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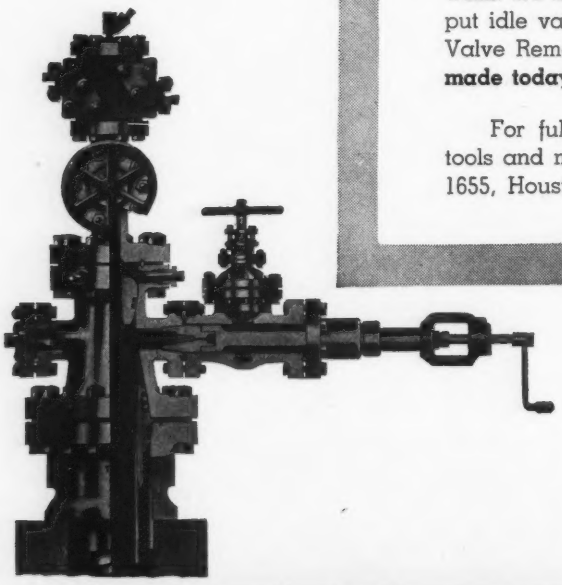

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TO SAVE NATURAL RESOURCES AND CRITICAL MATERIALS IN PEACETIME MAKES GOOD BUSINESS SENSE; TO SAVE NATURAL RESOURCES AND VITAL MATERIALS IN WARTIME BECOMES A PATRIOTIC OBLIGATION.

District Five Amended Delegation of Authority with Respect to Production Operations

A further expansion of powers previously delegated to the local Office of Petroleum Administration for War are contained in a new directive signed by R. K. Davies, Deputy Administrator for War, and received on June 30th by H. R. Gallagher, Director in Charge, District No. 5, P.A.W.

The Director for Production for District No. 5, Lawrence Vander Leck, is now authorized to grant exceptions for wildcat wells that previously had to be sent to Washington. The recompletion or deepening of settled or stripper wells may now be authorized by the local office.

Of particular interest to town lot owners and producers are the relaxing of restrictions in so-called town lot fields. The local officials may now determine the shape of a parcel upon which a well may be drilled in such fields, and a provision is made to drill as close as 125 feet from the outer boundaries of the drill site.

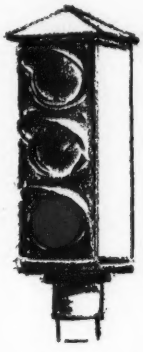
The transfer of pumping or other artificial lifting equipment may now be allowed by the local director. The only remaining restrictive in this matter is that the offset producer must consent in writing if the transfer is to a first line well that would produce more oil with the transferred equipment.

The local office may now grant operators authority to lay crude oil gathering lines if the cost of the system does not exceed $5000. The former top cost figure was $2500.

Of interest to land owners and operators in their relation to each other is the proviso that the District No. 5 office may now re-issue any outstanding exception in the event of change of ownership of a lease or property.

Finally, the local directors will be empowered to grant any other exception to Petroleum Administrative Order No. 11 by telegram or letter, as the local needs may arise.

This order follows by six weeks the original delegation of authority under which the Los Angeles office has been working since the issuance of Supplementary Order No. 4 to P.A.W. Order No. 11.



"The net effect of the new order," said Rush M. Blodget, Executive Vice President of Oil Producers Agency, "is to facilitate the operations of producers by making it possible for them to obtain more immediate decisions from the local office in Los Angeles, and to enable them to intensify their production efforts with less red tape."

The New Directive

Pursuant to the authority vested in me by Executive Order No. 9276 of December 2, 1942, as amended by Executive Order No. 9319 of March 23, 1943, there is hereby delegated to the Director in Charge, District Five, Petroleum Administration for War, the authority hereinafter set forth.

(a)

(1) The definitions appearing in Petroleum Administrative Order No. 11 shall apply to this Delegation.

(2) Reference herein to Petroleum Administrative Order No. 11 shall include any order issued as an amendment or supplement to Petroleum Administrative Order No. 11.

(b)

With respect to any production operation within District Five, the Director in Charge hereby is empowered:

(1) To deny any application for exception to Petroleum Administrative Order No. 11.

(2) To grant exception to Petroleum Administrative Order No. 11, with respect to those pools specified in Exhibit "A" of Supplementary Order No. 4 to Petroleum Administrative Order No. 11, authorizing a reduction in the size of any drilling unit or a variation in the well density prescribed therein a maximum of 10% and a reduction in any distance requirement a maximum of 20%.

Exception reducing distance requirements shall be granted only in unusual cases where extraordinary circumstances relating to physical conditions on the surface of the ground or extreme irregularity of any lease or tract precludes reasonable adherence to the standards prescibed.

(3) To grant exception to Petroleum Administrative Order No. 11, with respect to a new well in any pool described upon "Schedule I" attached hereto, authorizing a reduction in the size of any drilling unit prescribed by Exhibit "A" of Supplementary Order No. 4 for wells in that pool down to the number of acres specified upon "Schedule I" opposite the name of the pool, and further variation within the limits and under the conditions prescribed in paragraph (b) (2) hereof.

(4) To grant exception to Petroleum Administrative Order No. 11 authorizing the drilling and completing of a well to prospect for an undiscovered pool where such well is located within two miles of any drilling or producible well, provided that such well shall not be completed in any pool specified in Exhibit "A" of Supplementary Order No. 4 unless it conforms to the ap-

SCHEDULE I
SAN JOAQUIN VALLEY

Column (1) Field	(2) County	(3) Name of Pool	(4) Formations Included in Pool	(5) Vertical Depth Limit (Feet)	(6) New Well (Acres)
Belridge North	Kern	Temblor	"A" to "F"		10
Belridge North		"R" Sand	"R" to "U"		20
Belridge North		Wagon Wheel	"U" to Top Black Shale ("W" plus 500′)		10
Belridge North		"Y" Sand	Base Black Shale to "Y" plus 400′		20
Coalinga East	Fresno	Cretaceous	To base of Cretaceous Sand	3,500	5
Coalinga Northeast	Fresno	Gatchell	"EGA" to "EGZ"	8,500	20
Coles Levee North	Kern	"21-1"	"N" plus 250′ to "N" plus 550′		20
Coles Levee North		Western	"N" plus 350′ to "N" plus 1500′ exclusive of 21-1 Pool		20
Coles Levee South	Kern	Stevens	"N" to "N" plus 2,000′		20
Greeley	Kern	Stevens (Greeley)	Above "S" plus 500′		20
Jacalitos Anticline	Fresno	Temblor	Above top of Kreyenhagen Shale	5,000	10
Kettleman North Dome	Kings and Fresno	Temblor (I-V Zone)	"A" to "S" plus 100′		20
Kettleman North Dome		Eocene	Below "MS"	11,500	40
Lanare	Fresno	Temblor	Above Top Kreyenhagen Shale		40
Mt. Poso District	Kern	Dyer Creek	To base Lower Vedder Sand	3,500	5
Mt. Poso District		McVan	To base Lower Vedder Sand		5
Panoche Creek	Fresno		All		20
Pleasant Valley	Fresno		All		20
Raisin City	Fresno		All		20
Riverdale	Fresno	Temblor	Above top Kreyenhagen Shale		40
Riverdale		Eocene	First 500′ below bottom Kreyenhagen Shale		40
Rio Bravo	Kern	Rio Bravo-Vedder	To base Lower Vedder Sand	11,600	20
Round Mountain	Kern	Jewett	"J" to "T" (or top of Vedder Sand)		10
Strand East	Kern	Stevens	All Zones	9,000	20
Ten Section	Kern	Stevens	Above base Stevens Sand	9,000	20
Wasco	Kern	Vedder	To base Vedder Sand		20
Wheeler Ridge	Kern		All Zones	4,500	10
"Other Fields"*					10

* As listed Exhibit "A" of Supplementary Order 4 of P. A. O. 11.
This amended Schedule 1 wholly supersedes that attached to the Delegation issued April 22, 1943.

SCHEDULE I
COASTAL

Column (1) Field	(2) County	(3) Name of Pool	(4) Formations Included in Pool	(5) Vertical Depth Limit (Feet)	(6) New Well (Acres)
Aliso Canyon	Los Angeles	Sesnon (Miocene)	"S-1" to "S-13"		20
Bardsdale	Ventura	All	All		10
Del Valle	Ventura and Los	Vasquez-Videgain			
Del Valle	Angeles	(Sherman)	"DV_1" to "DVI_4"		20
Del Valle		DL Zone	"DL_1" to "DL_3"		20
		Bering	"MB_1" to MB_3"		20
Elwood	Santa Barbara	Monterey	Above Top of Vaqueros		10
Gato Ridge	Santa Barbara	Sisquoc (Shallow)	Above Pliocene-Miocene Contact		10
Holser Canyon	Ventura		Holser Zone		20
Hopper Canyon	Ventura		All	3,000	10
Orcutt	Santa Barbara	1st, 2nd, & 3rd Zones	All above base of Point Sal Sand	4,500	10
Rincon	Ventura	Deep	Below top Miley Shale plus 2000′		40
Santa Barbara	Santa Barbara		All	2,500	10
Santa Maria Valley	Santa Barbara	All	All above the Franciscan	6,000	20
Sespe Canyon	Ventura		All	3,500	10
Shields Canyon	Ventura		All	3,500	10
Sisar-Silverthread	Ventura		All	3,500	10
Temescal	Ventura		All	3,500	10
Torrey Canyon	Ventura		All	2,500	10
Ventura Avenue	Ventura	D-7	Below "DS" in the "D" Block		40
Zaca	Santa Barbara	Davis	Miocene Chert	6,500	20
Coastal "Other Fields"*					10

* As listed in Exhibit "A" of Supplementary Order 4 of P. A. O. 11.

plicable uniform well spacing provisions provided therein for that pool and provided that if such well is completed as a gas or condensate well it shall not be produced beyond a fifteen days test period without authorization of the Petroleum Administrator or the Deputy Petroleum Administrator.

(5) To grant exception to Petroleum Administrative Order No. 11 with respect to a well in any flush, semi-flush, settled or stripper pool (as designated on a list issued by the Director of Production and the District Five Director of Production) authorizing operations involving:

(I) The recompletion of any well by plugging-back or perforating in a settled or stripper pool.

SCHEDULE I
LOS ANGELES BASIN

Column (1) Field	(2) County	(3) Name of Pool	(4) Formations Included in Pool	(5) Vertical Depth Limit (Feet)	(6) New Well (Acres)
Alamitos Heights	Los Angeles	All	Above Base of McGrath Zone	7,200	10
Buena Park	Orange		All		20
Coyote-West	Orange and Los Angeles	Upper and Main "99" Zone	Above "F"		10
			"F" to "V"		10
El Segundo	Los Angeles	Schist-Conglomerate	Top Nodular Shale to Schist	8,000	10
Inglewood	Los Angeles	Sentous	First 600′ below base of Nodular Shale		20
Long Beach	Los Angeles	Wilbur-Alamitos-Brown-Deep	Above "BA"		10
Long Beach		DeSoto	Below "BA"	10,600	20
Playa Del Rey-Venice	Los Angeles	Upper (Shallow)	Above top of Nodular Shale	5,000	10
Playa Del Rey-Venice		Deep (Conglomerate	Top Nodular Shale to Schist	7,000	10
Potrero	Los Angeles		All	6,500	10
Richfield	Orange	Chapman-Kraemer	Below Chapman Shale	5,000	10
Rosecrans-Athens	Los Angeles	All above Zins	All above top Zins Shale		10
Rosecrans-Athens	Los Angeles	Padelford-Maxwell	Top Padelford Shale to Top Hoge Shale		10
Rosecrans-Athens		Upper & Lower Hoge	Top of Hoge Shale to Top Upper Zins Shale		10
Santa Fe Springs	Los Angeles	Foix	Top of Foix Shale to Top Bell Shale		10
Santa Fe Springs		Bell	Top Bell Shale to Top Meyer (M-1) Shale		10
Santa Fe Springs		Meyer	Top Meyer Shale to Top Nordstrom Shale		10
Santa Fe Springs		Nordstrom	Top Nordstrom Shale to Top Buckbee Shale		10
Torrance-Hermosa-Redondo	Los Angeles	Shallow (Main)	Above base "I" Shale		5
Torrance-Hermosa-Redondo		Deep (D&B, 34, Flint, etc.)	From base of "I" Shale to Schist		10
"Whittier District"	Los Angeles	As listed *	All		5
"Los Angeles District"	Los Angeles	As listed *	All		40
L. A. "Other Fields"		As listed *	All		10

* As listed in Exhibit "A" of Supplementary Order 4 of P. A. O. 11.

(II) The recompletion of any well by deepening or redrilling in a settled or stripper pool, deeper than that in which it was last completed, provided that the proposed operation conforms to the uniform well spacing provisions applicable for new wells in the pool in which the well is to be recompleted and subject to further variation within the limits prescribed in paragraph (b) (2) hereof.

(III) The recompletion of any well by deepening, redrilling, plugging-back or perforating in a flush or semi-flush pool, other than the pool in which it was last completed, provided that:

Such well no longer is capable of producing oil from the pool in which it was last completed in sufficient quantity to pay the current out-of-pocket cost of operation, and

The well as recompleted shall not expose more than one pool in the same bore hole, and

The proposed operation conforms to the uniform well spacing provisions applicable for new wells in the pool in which the well is to be recompleted subject to further variation within the limits of paragraph (b) (2) hereof.

(6) To grant exception to Petroleum Administrative Order No. 11 authorizing the drilling of a new well in a "town lot" field located in an incorporated or unincorporated city, town or village where the land is subdivided into town lots or blocks none of which exceeds ten (10) acres in size which may:

(I) Waive the requirements of paragraph (c) (5) of Supplementary Order No. 4 for the drilling of a new well, provided the applicant at the time of issuance of any such exception owns the fee simple title or oil and gas leasehold estates totaling not less than 60% of the "property interest" in the drilling unit prescribed for the particular pool in Exhibit "A" of Supplementary Order No. 4 and reasonable provision, by escrow of funds or otherwise, is made for protection of those owning the remainder of the property interests therein.

(II) Waive the requirements of paragraph (c) (6) of Supplementary Order No. 4 for the drilling of a new well.

(III) Authorize a reduction down to 125 feet in the distance of such well from the boundaries of the drilling unit.

(7) To grant exception to Petroleum Administrative Order No. 11 authorizing the transfer of pumping or other artificial lifting equipment between wells, except that transfer to a first line well of equipment of increased producing capacity shall not be authorized unless applicant obtains the written consent of the offset operator or operators.

(8) To grant exception to Petroleum Administrative Order No. 11 authorizing the use of material for installing pumping or other artificial lifting equipment on any well where exceptional conditions warrant variation from the well density prescribed in Supplementary Order No. 4 to Petroleum Administrative Order No. 11 and provided that the crude oil production to be obtained by such installation shall not be less than 1.0 barrel daily per ton of steel required.

(9) To grant exception to Petroleum Administrative Order No. 11 authorizing the use of material to construct, install or extend a crude oil gathering line or install a shipping pump to be operated in connection with a crude oil gathering line where the material cost of the proposed installation or extension, exclusive of shipping pump, does not exceed $5,000 when completed and where neither such gathering line nor shipping pump duplicates in whole or in part the transportation functions of any existing crude oil gathering line facility.

(10) To reissue any outstanding exception in the event of change of ownership of a lease or property, upon application of the assignee confirming the representations contained in the original application for exception and agreeing to abide by the terms of the exception as granted.

(11) To grant any such exception to Petroleum Administrative Order No. 11 as the Petroleum Administrator or the Deputy Petroleum Administrator may specifically direct.

(c)

Any person whose application for exception to Petroleum Administrative Order No. 11 has been denied in whole or in part may appeal to the Petroleum Administration for War, Washington, D. C., by filing a letter in triplicate with the Petroleum Administration for War, Subway Terminal Building, Los Angeles, California, stating fully the grounds of the appeal. Forthwith the entire file will be forwarded to the Petroleum Administration for War at Washington, D. C.

(d)

The Director in Charge, District Five, is authorized to require an operator to file with the Petroleum Administration for War, prior to the commencement of a production operation within California, a copy of such official form as is required to be filed under state law of California in connection with such operations.

(e)

The Director in Charge, District Five, within the authority hereby delegated, is granted the authority to sign and issue exceptions in his own name and may delegate this right to the District Director of Production for a crude oil operation, and to the District Director of Natural Gas and Natural Gasoline for a natural gas, natural gasoline, or condensate operation, and to the District Director of Transportation for a crude oil gathering line or shipping pump.

(f)

Prior to issuance, all exceptions granted under this authority shall be submitted to the District Counsel for recordation, review and approval as to form.

This amended Delegation wholly supersedes the Delegation dated April 22, 1943.

Issued this 25th day of June, 1943.

(Signed) R. K. DAVIES,
Deputy Petroleum Administrator for War.

California Grants Discovery Bonus

An inducement to California oil operators to engage in exploratory drilling has been announced. The Production Committee for District No. 5 is offering a bonus allowable to any well successfully completed and discovering a new oil pool. The announcement was made by Mr. E. E. Pyles, Chairman of the Production Committee, in a letter to all California oil producers. Mr. Pyles says: "The most practical and logical reward which can be offered within the scope and authority of the Production Committee is to grant a bonus crude oil allotment to any well which constitutes a 'new discovery.' I believe the reward granted by the Production Committee to those operators who are successful in their wildcat drilling is generous."

Allocation to discovery wells increases progressively with increasing depth. The Committee has prescribed both the total barrels to be allocated, as well as the daily rate of production. Wells drilled to a depth of 2,000′ are given a total allocation of 30,000 barrels, to be produced at a daily rate of 325 barrels; while wells of 10,000′ depth receive 150,000 barrels, to be produced at a daily rate of 525 barrels. The scale is graduated for intermediate and other depths. In no case, however, is any well granted an allotment greater than its capacity to produce. The ruling applies to any new discoveries completed subsequent to May 1, 1943. Limiting conditions under which discovery wells may participate in the bonus are set forth. Certification of any such wells to determine that they have made a discovery is necessary. Production at the bonus rate is not extended to wells with extremely high gas-oil ratios nor where the natural gas produced with the crude oil cannot be utilized. Also production may not be greater than the volume which can be transported and marketed. Completion of an offset well located in the same pool within 1320′ of the discovery well will terminate the bonus allotment to the discovery well.

It is pointed out that this meausre is another step taken by the petroleum industry to meet the ever increasing demand for petroleum products occasioned by the war activity.

Resolution

WHERAS, the Production Committee for District Five finds that encouragement should be given to exploratory drilling which has as its purpose the discovery of new re-

serves of crude oil within the district; and

WHEREAS, the Production Committee finds that a means of giving encouragement to such drilling would be the granting of allotments to wildcat wells that have made such discoveries higher than the allotments made to wells which are not discovery wells,

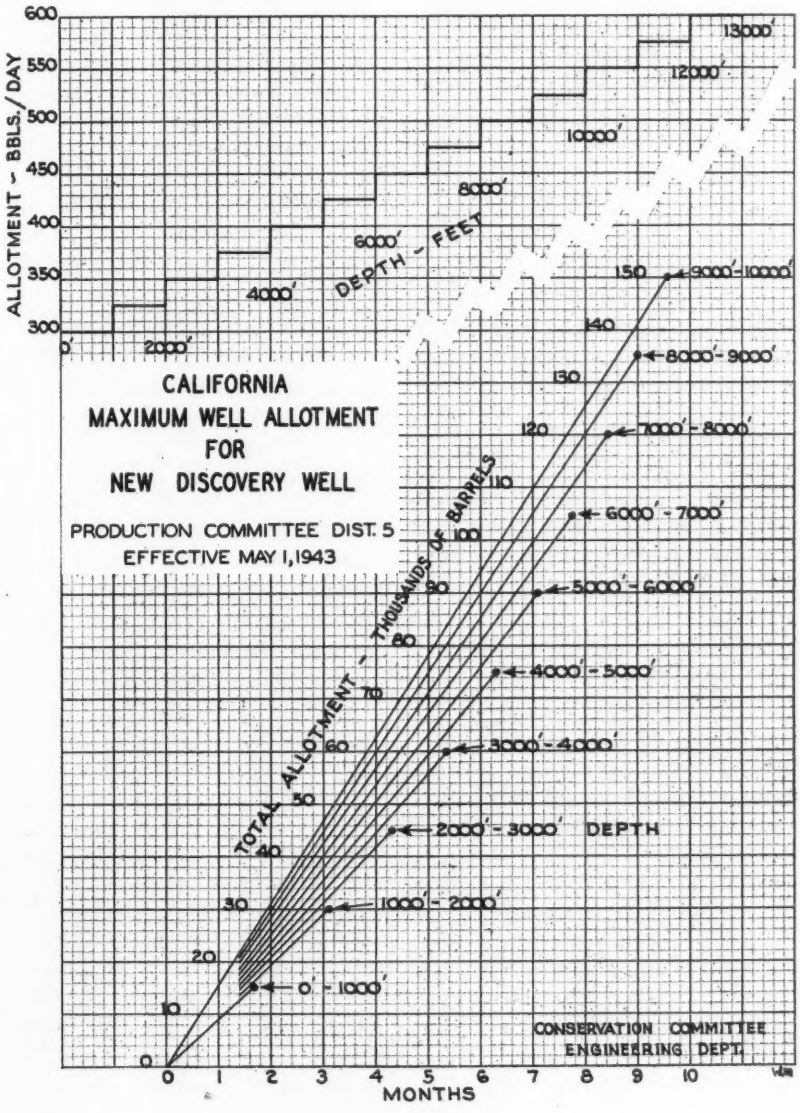
NOW, THEREFORE, BE IT RESOLVED, that effective May 1, 1943, and subject to the limitations and conditions hereinafter prescribed, a scale of total allotted crude petroleum and a maximum daily rate of production for discovery wells in new pools be and the same is hereby adopted as follows:

Depth in Feet	Total Barrels	Barrels Per Day
less than 1,000	15,000	300
1,000 or more and less than 2,000	30,000	325
2,000 or more and less than 3,000	45,000	350
3,000 or more and less than 4,000	60,000	375
4,000 or more and less than 5,000	75,000	400
5,000 or more and less than 6,000	90,000	425
6,000 or more and less than 7,000	105,000	450
7,000 or more and less than 8,000	120,000	475
8,000 or more and less than 9,000	135,000	500
9,000 or more and less than 10,000	150,000	525
10,000 or more and less than 11,000	165,000	550
11,000 or more and less than 12,000	180,000	575
12,000 or more and less than 13,000	195,000	600

The above scale shall be extended by progressive graduation to apply to any discovery well which shall be completed to a depth in excess of the maximum depth above tabulated.

The foregoing scale shall be applicable only to such wells completed from and after the effective date thereof as may be certified by the Production Committee to be discoverey wells, and to those wells only if and for so long as they are determined by the Engineering Subcommittee of the Production Committee to have reasonable gas-oil ratios. Any certified well incapable of producing crude petroleum at its rate indicated on the scale shall be permitted to produce, subject to the limitations herein contained, at such a rate as it is capable of producing. Should the regular allotment to any certified well be greater than the daily rate, as above set forth, such well may be produced at its regular allotted rate.

Subject to the limitations herein contained, the foregoing scale shall be applied to a certified well until the total amount of production allotted to such certified well shall be produced, or until the "shut-off date," (said date being the last day of the calendar month in which the first "offset well," as that term is hereinafter defined, shall be completed), which ever event shall first occur; provided, that if the latter of said two events shall first occur, then the said first offset well and also any other offset well or wells completed on or before the said shut-off date shall be entitled to produce, commencing on their respective dates of completion and continuing through the said shut-off date, at the same rate at which the said certified well shall be entitled to produce during the same period.



Thereafter, commencing on the day following the said shut-off date and continuing until the Maximum Efficient Rate of Production shall be established for the field or pool from which such wells produce, such certified well and any and all such offset wells shall be permitted to produce in accordance with arbitrary allotments assigned to them, respectively, by the Production Committee. The term "offset well," for the purposes hereof, shall mean and refer to any well which, with reference to any particular certified well, shall be completed as a commercial producer in the productive zone discovered by such certified well; shall be located at or within 1320 feet from such certified well; and shall be located upon lands the fee title to which is vested in a person other than the owner of the fee title to the lands upon which such certified well is situated.

Notwithstanding the rates of production set forth in the foregoing scale, no certified well shall be produced at a rate in excesss of that rate determined by the said Engineering Subcommittee to be the maximum rate at which oil can be produced from any such well without damage to the reservoir; provided, that no such determination shall be made with respect to a certified well until the Engineering Subcommittee shall have first given the operator thereof thirty days' written notice of its intention to make such determination.

Except as hereinafter in this paragraph provided, no certified well shall be produced at a rate in excess of the rate at which the oil produced therefrom can be marketed, or in excess of a rate which will permit the transportation and utilization, without the installation of abnormal facilities, of all the natural gas produced in conjunction with the oil production, provided, that notwithstanding the above or any other limitations herein contained, the operator of a certified well shall be entitled at all times to produce such well at its regular allotment.

In the event the operator of a certified well shall fail or refuse to furnish to said Engineering Subcommittee, within ten days after receipt of request therefor, such pertinent reservoir and surface data as may be required by the said Engineering Subcommittee for the purpose of making any determination hereunder with respect to such well, the right to produce such well at the rate applicable thereto in accordance with the foregoing scale shall be suspended until such data are furnished and such determination made, and during such suspension period such well shall not be produced at a rate in excess of its regular allotment.

The term "regular allotment" whenever and wherever used herein, shall mean and refer to that rate of production (as the same may be changed from time to time by the Production Committee) duly and regularly allotted to a certified well by the Production Committee following the determination by the said Engineering Subcommittee of the Maximum Rate at which such well can be produced without damage to the reservoir; provided, that previous to the making of the determination above referred to, the said term shall mean and refer to such provisional rate as may be set by the Production Committee on the basis of such information as it may have with respect to the certified well involved.

BE IT FURTHER RESOLVED, That any and all resolutions, recommendations or orders heretofore adopted by the Production Committee, which have not heretofore been cancelled or otherwise terminated, and which provide for additional allotments of crude oil production to discovery wells, be and the same are hereby terminated; provided that, subject to the limitations and conditions herein set forth, the foregoing scale shall apply to any discovery well heretofore completed to which additional allotment shall have been extended pursuant to the provisions of any resolution of the Production Committee hereby terminated, but which well, as of the effective date hereof, shall not have fully produced all of the additional production so allotted, except that deduction shall be made of the total amount of oil produced from such well prior to the effective date hereof.

Set Location For Oil-Country Tubular Goods Depots

Location of 12 oil-country tubular goods depots to be established to meet emergency needs of wildcat operators was announced on June 24 by Deputy Petroleum Administrator Ralph K. Davies. The depots are expected to be in operation sometime in August.

Towns in or near which the depots will be located and the quantity of tubular goods to be kept on hand are: Chase, Kansas, 800 tons; Mt. Pleasant, Michigan, 400 tons; Grayville, Ill., 500; Seminole, Oklahoma, 500; Houston, Texas, 1,300; Corpus Christi, Texas, 800; Odessa, Texas, 700; Shreveport, La., 700; Wichita Falls, Texas, 600; Cut Bank Montana, 400; Casper Wyoming, 600; and Los Angeles, Calif., 2,700 tons. Plans to establish the emergency tubular-goods depots were announced by Administrator Harold L. Ickes last May. Object of the depots is to encourage wildcat drilling operations by meeting the need for minimum stocks of materials that will be available immediately when required for wildcat and emergency purposes. The Administrator estimated that at least 4,500 wildcat wells should be drilled this year.

U. S. Geological Survey Announces Promotions

H. G. Barton has succeeded Robert C. Patterson as Supervisor, Oil and Gas Operations, California District. Address: U. S. Geological Survey, Oil and Gas Leasing Division, Rm. 429-F, U. S. Post Office and Court House, Los Angeles 12, California.

B. H. Murphy has succeeded H. G. Barton as Deputy Supervisor, Oil and Gas Operations, Taft Sub-office.

Depth Measurements VITAL To WELL COMPLETIONS

By A. C. H. COOKE

The oil industry can no longer afford the luxury of careless depth measurements, with manpower and material at a premium. Accuracy and correlation of measurements must be maintained "from the grass roots down."

Measurements of distances on the surface of the earth have been developed into a fine art called "Surveying" for which engineering colleges produce trained engineers. Yet, in spite of its importance, there has been relatively little development of the art of measuring the vertical distances in drilled wells. The foundation of the oil industry was established in the days when gushers marked the location of productive zones. Measurements were relative but not necessarily accurate. Later developments established increasing multiplicity of producing zones at greater and greater depths. Some of these zones were relatively large, and measurements remained unimportant as the largest and most productive zones were selected for completion.

The importance of accurate well depth measurements is often emphasized when a well reaches the testing or completion stage. The ultimate results are hinged on the accuracy of the preceding work on the well. Where all depth measurements correlate satisfactorily, the results of testing or completion data are more apt to be conclusive. Quite often a well reaches the final stages before it is realized that a lack of complete or correct data handicaps the ultimate completion. As a result a productive zone may be condemned, expensive repair work required or the production obtained may be only a small percentage of the actual potentialities of a zone.

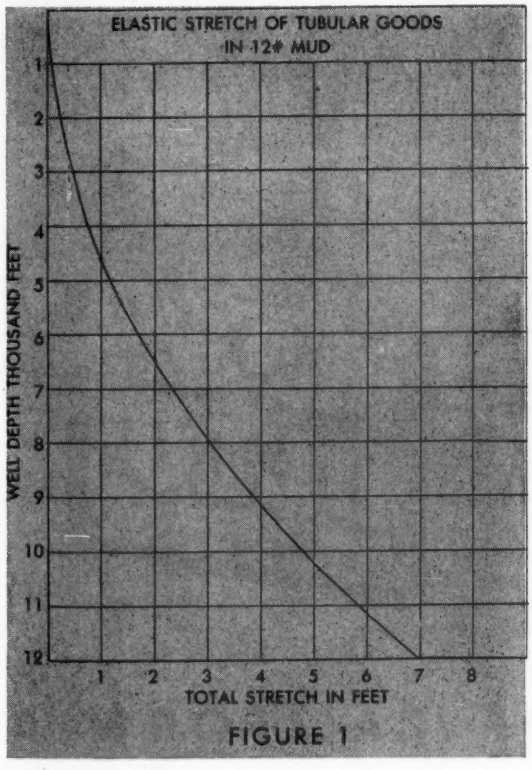


FIGURE 1

More recently the development of comparatively thin productive zones has become imperative. With the thickness of the zone further complicated by the depth from the surface and by the presence of gas or salt water it is imperative that all measurements correlate. It is obvious that any measurement practice which will produce results in thin zones will be beneficial in all drilling and production work. Modern scientific developments aid in the "selective" completion of wells in thin productive zones, even at considerable depth and with the greater complications of undesirable gas and/or salt water.

The common yard-stick of the oil well engineer is the drill pipe used in drilling the wells. Unfortunately, this pipe cannot be measured at the time it is within the bore hole, but may be measured only when it is outside the well. At the time of drilling a well the importance of measurements is often overshadowed by the other phases of the operations. After obtaining as much information concerning the exposed formations as scientific devices can reveal, the original yard-stick, the drill pipe, is put aside. The bore hole is then sealed with threaded pipe, measured one joint at a time. The maximum depth reached by the drill pipe can no longer serve as a bench mark unless this casing extends the full length of the bore hole. Because of size restrictions the original drill pipe cannot often be used inside the casing and either smaller drill pipe or coupled tubing must be used to establish a bench mark near the total depth of the well.

In this program of changing "yard-sticks," many expensive and troublesome errors occur. Not all measurements are supervised by competent engineers with the result that, when the critical completion stage is reached, the engineer or superintendent is handicapped by ambiguous details of the operations prior to the final stage.

The first step in any organization to reduce costs by maintaining accurate well depth measurements is the selection of an engineer to be charged with that responsibility. In a small organization this may be a part-time

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duty, but in the majority of companies it is a full-time assignment. It should be the first duty of the engineer assigned to measurements to create a "measure consciousness" within his company. A study of the records of a number of wells may provide facts oozing with dollar signs to emphasize the importance of measurements. Following this preliminary work, a standard measuring system must be adopted whereby measurements may be kept accurate from the surface to maximum depth of any well. This program should be all inclusive and should tie in to drilling, coring, electrical logging, casing, perforating, competition and ultimate work-overs.

Records of measurements should be kept accurately, both in the daily drilling reports and in the engineers' well log. A definite bench mark or reference point at the surface should be used at all times. Where the ground level is used as a depth reference this level should be permanently established by reference to some substantial reference point. A concrete derrick corner may have a bolt head set in it as a bench mark; a permanent derrick may be marked at the level of the rotary table; or all measurements may refer to the level of the final casing braden head. The customary procedure in rotary drilling is to use the top of the rotary drive bushing as the zero point. However, in the final record of the well, all measurements must tie in to the same reference points and should include:

1. Elevation of well location.

2. Distance from ground level to top of rotary drive bushings.

   (a) Record all depth measurements made from this point.

   (b) Note any changes in this measurement due to changes in rotary, casing spider, or sub-structure.

   (c) Note distances from original floor to top of original drive bushings.

3. Distance from rotary drive bushings to:

   (a) Surface casing braden head.

   (b) Final casing braden head.

   (c) Companion flange of master gate.

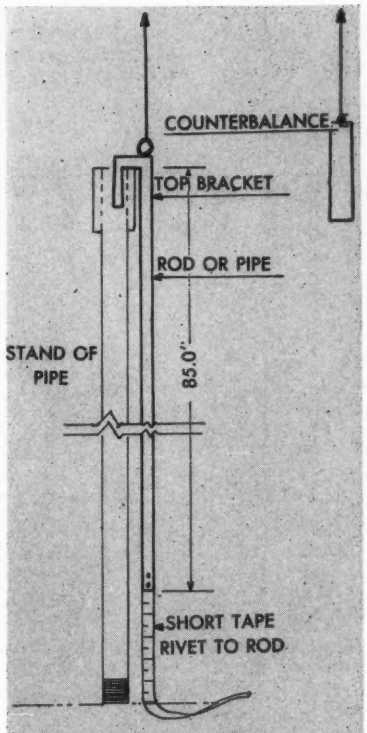
   (d) Companion flange of tubing head.

The second bench mark in a well is the final total depth, which is more closely related to the zones or depths of vital interest. The establishment of this total depth bench mark and eventual use of it is often the cause of measure discrepancies. As previously stated, the use of different tubular "yard-sticks" contributes to these errors. In some cases, a careful tally of the casing as it is run may provide future reference points at the casing collars. In other cases, the accurate plug-back distances furnish new total depth bench marks within the casing. Science has recently contributed a greater aid to the oil operator with the development of Radioactivity Logging by means of which cased-off zones may be relocated accurately with respect to the surface or with respect to a total depth.

During the drilling of a well each marker or definite formation change becomes a reference point to be recorded in the well log by the driller. As drilling progresses the addition of more drill pipe increases the distance of each reference point from the ultimate total depth bench mark. The value of these reference points depends on the accuracy with which the driller can detect a break or change in formation and on the accuracy of the drill pipe measurements at that time.

In rotary drilling, the drill pipe measure is used as the basis of all subsequent measurements. The first step is to mark the kelly at five or ten foot intervals measured from the tool joint pin. The lengths of all bits, subs, and drill collars are measured accurately. Drill pipe may be measured under various conditions. The chief source of error may be eliminated before starting a well; that is, buy a good steel tape and provide accessories for its proper use. In no case should a steel tape be used with the measurements beginning and ending at the extreme outer ends of the ring. The tape should have a blank space at each end and be provided with a permanent shoulder or hook at the zero point. Tapes in which the feet are scaled in tenths and hundredths are preferred to inch divisions as the conversion from inches to feet sometimes causes error.

Drill pipe may be measured while laying on the pipe rack or one joint at a time before making up into the string. The usual practice is to measure one joint at a time during drilling as the pipe is added to the string. When a new string of pipe is picked up as a drill-in string the pipe may be measured in groups of ten or more joints.



SUSPENDED MEASURED ROD PIPE STANDING IN DERRICK

Figure 2

Following are a few of the recognized causes of error in this method of measurement:

1. *Inaccurate Tape.* The chief interest is rapid, economical drilling. As a result, the tape may be broken by rough handling; a cheap cloth tape may be used; or the zero of the tape is not provided with a shoulder.

2. *Inaccurate Reading or Recording.* The tape should be read and called by one man and the reading checked by another who also checks the figures recorded. Poor lighting and bad weather contribute to errors in reading the tape.

3. *Stretch of Pipe Neglected.* Although the pipe is measured carefully when it is picked up in a string, the length increases when suspended vertically in a well. This elongation has been computed on an average basis and in deep wells it accumulates to a considerable amount. See Fig. 1.

4. *Effect of Operations.* A new drilling string is subject to make-up loss

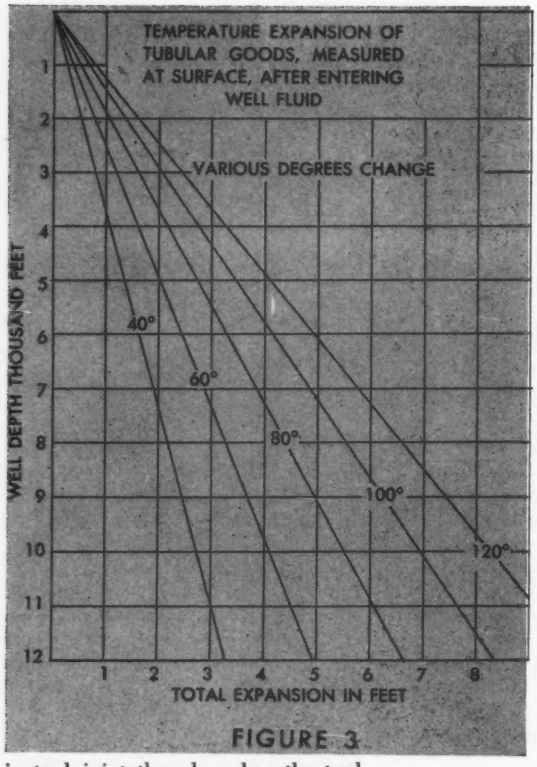


FIGURE 3

in tool joint threads unless the tool joints are integral with the drill pipe. Any pipe is subject to elongation during drilling as the result of severe strains resulting from stuck pipe or fishing jobs. Replacement of a joint because of damage or failure may change the total length of the string one or two feet.

5. *Use of Stenciled Length.* Some operators stencil the length of each joint on the pipe below the upper tool joint. This may be a time-saving practice but is not to be recommended for accuracy.

6. *Multiple Opportunity for Error.* Errors accumulate in proportion to the opportunity for error. When pipe is measured one joint at a time, the opportunity for error is three times as great as when measured in a stand of three joints at a time.

Drill pipe may be measured in the derrick and there are several variations in this method. The usual practice is to measure the stands of drill pipe a row at a time either coming out of the hole or going in the hole. This is subject to several errors.

1. Inaccurate tape.
2. Inaccurate reading or recording.
3. Stretch of pipe is neglected.
4. Bow of pipe and tape not the same.
5. High wind blowing tape.

One operator overcame this difficulty by using an accurately measured rod suspended in the derrick. This rod is made of small diameter pipe equipped with a shoulder at its upper end and a short section of tape at the lower end. The "yard-stick" will conform to the bow of the racked drill pipe and is not too greatly affected by high winds. See Fig. 2.

6. Temperature effect is neglected.

In cold weather the temperature affects the length of the drill pipe. Fig. 3 illustrates the change in length of a string of drill pipe withdrawn from a well at 150° F. and measured after cooling to 30° F.

One method of overcoming the errors due to the bow of the pipe or temperature is to measure each stand separately as it is suspended in the elevators, but with the weight of the string resting on the slips. Although this method purposely neglects stretch, it is considered accurate. An additional source of error is introduced unless the tape is provided with an elevator offset. See Fig. 4.

Correctly measuring the drill pipe when coming out of the hole with weight suspended on the elevators is considered to be the most accurate method possible. Though still subject to tape and human errors the measure is made while the drill pipe is most nearly in the drilling conditions. Comparable measurements are:

Tubing measured in strain.
Casing measured in strain.
Calibrated steel line measurements.

The upper end of the tape *must* be provided with an elevator offset. See Fig. 4.

During the drilling of a well one or more electrical logging surveys may be made by a service company. As this survey may be correlated with the drill pipe measure at each reference point and at the total depth bench mark, it serves as a satisfactory check on the accuracy of well measurements. It must be realized, however, that the prime objective of the electrical log is to obtain relative recordings of well characteristics and not to establish depth accuracy. As this service is furnished by use of a conductor cable the "yard-stick" introduced may or may not correlate infallibly with the well measurements. In the first place, the conductor cable is always under tension when recording the log. Actually then, the measurements made should correlate only with "pipe in strain" well measurements. In some cases the cable measurements are changed to compensate for the error in the measuring method used on the well, but this can only be an average correction and, therefore, is not exact.

Quite often the well conditions are conducive to errors in the measurements obtained with the electrical logging cable.

1. *Failure to Reach Bottom.* The first check on the measurements made on an electrical log is the total depth recorded. Poor circulation of the drilling mud may leave a quantity of cuttings in the well which may form a bridge in the hole or may fill up a portion of the hole. Extra circulating and mud conditioning time will pay dividends in accuracy of measurements.

2. *Fluid Density Incorrect.* All conductor cables are more or less buoyant and the length of the cable may be affected by the buoyancy of the drilling mud. Where the service company compensates for this known buoyancy the average density of the mud in the well is an important factor.

3. *Effect of Crooked Holes.* The size of the drill pipe causes it to remain comparatively close to the center of the bore hole. On the other hand, the conductor cable takes the shortest possible path, even cutting into the wall of the hole. In many cases the electrical logging cable is unnaturally distorted by the unknown loading imposed by key-seating of the cable in the well due primarily to the deviation from vertical.

It is unreasonable to expect the measurements made with a conductor cable always to correlate exactly—even with the most accurate drill pipe measurements. Engineering practice demands a check on all data. There-

fore, the electrical log should always be checked against well measurements. The reference points and the total depth bench marks should be considered in the light of their accuracy. If it is impossible to obtain accurate measurements with the drill pipe, then it is doubly difficult to correlate the electrical log properly.

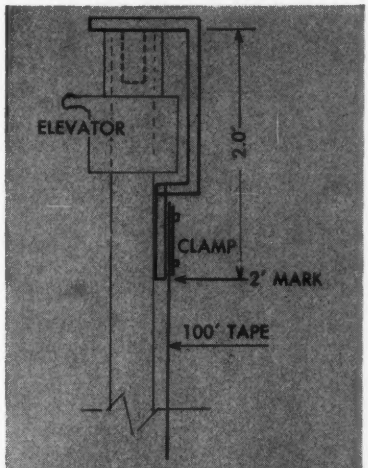
The greatest potential source of error in measurements is the fact that electrically located zones are cased off and both the drill pipe and electrical log measurements are superseded by the casing measurements.

Prior to running casing in a well the hole should be circulated clean and an accurate "strain measure" obtained with the drill pipe. This furnishes a bench mark at total depth as a direct check of the casing measure. In some cases the casing is not run to the total depth established by the drill pipe. Where this is necessary, a cement plug or bridge should be established by the drill pipe measure to furnish the casing a total depth correlation with drill pipe measure.

The methods of measuring casing vary as much as measuring drill pipe but the additional source of error is that due to thread make-up. When measured on the pipe rack, the length of each joint is taken from the top of the collar to the last thread. The make-up will vary, so this method should be supplemented by the center-punch method; that is, a center punch mark is made at the last even tenth of a foot above the last thread. When the joint is made up a small scale is used to measure from the collar to the center punch mark and the measure is added to the length of the joint. Each joint should be numbered as it is measured and should be run in the order in which numbered. The advantage of this is that the collars may be relocated in the hole at a later date and serve as plug-back bench marks that tie in with the original well measure.

Again the opportunities for error are in proportion to the number of joints and the opportunity for a strain measure is often neglected. Where the casing is to be used only as a protection string the accuracy of measurements is relatively unimportant. When the casing is sealing off possible productive zones it should be measured most carefully. If the productive zones were located with "drill pipe in strain" measurements, the casing should be measured *after* make-up while suspended from elevators "in strain."

Prior to cementing, the casing should be washed down to the original total depth or to plug-back depth. *Without this check the value of previous drill pipe measurements may be lost.* After cementing the casing the final step often leads to confusing discrepancies. The last joint measured is usually suspended at some distance



ELEVATOR OFFSET FOR TAPE PIPE IN STRAIN MEASURE
Figure 4

above the rotary or casing spider. *Before* this joint is removed, it should be plainly marked at the elevation of the original kelly drive bushings. The total depth of the casing then is the total measured length *less* the distance from this mark to the upper collar of the joint.

All casing data, including *how* casing was measured, plus tie-in measurements at well zero and total depths, should be recorded in the well measure log. It may be the only source of information when a work-over rig is moved in for repair or plug-back operations.

Often a string of smaller O.D. drill pipe is used within the casing to drill the casing plugs and drill in to the producing zone. When the casing has been provided with a float collar one joint above bottom the total length of the drill-in string may be checked against the casing measurements when the bit contacts the harder material of the float valve. The measure should not be checked at the point of contact with the cementing plug as this plug may not be exactly in contact with the float valve but may be suspended several feet above it by cement. The measurement of the drill-in string should be made as accurately as that of all previous measurements. Where screen and liner is set by using the drill-in string the entire string should be measured out of the hole *after* releasing from the liner. The exact location of the top of the liner may furnish an additional bench mark at a later date.

All too often the success of a well depends on the accuracy of well measurements made with the flow string or tubing. This pipe is primarily designed as a conduit for the withdrawal of oil or gas from a well. Because of its convenience it is used in place of drill pipe for many operations in cased wells. Stretching and rotating strains affect the measure in opposite ways and either may result in inaccurate completion or repair practice. Because of variable thread, make-up tubing should be measured "in strain" each time it is withdrawn from the well. Accepted practice includes measuring tubing on the pipe rack one joint at a time similar to that used with casing. The center-punch method should supplement this type of measure. When tubing is racked in the derrick the curvature or bow is often considerable and may contribute to unreliable measures. As with drill pipe, the length of tubing may be most accurately obtained by measuring out of the hole while the weight of the string is suspended from the elevators. The elevator offset should be used with the tape in *all* strain measurements. The data in Fig. 5 illustrate the possible errors of measurements which neglect thread make-up of tubing *and* the elongation of the suspended string.

Where tubing measurements at total depth are to be used to correlate with perforator measurements, particular care should be used to make the tubing measurements correspond with original drill pipe measurements. Otherwise the total depth established by the tubing may lead to inaccurate perforating. The first check is between the casing float collar location and the tubing measure to that point. When this fails to check, the tubing should be measured out of the hole in strain. Some errors have been traced to the following causes:

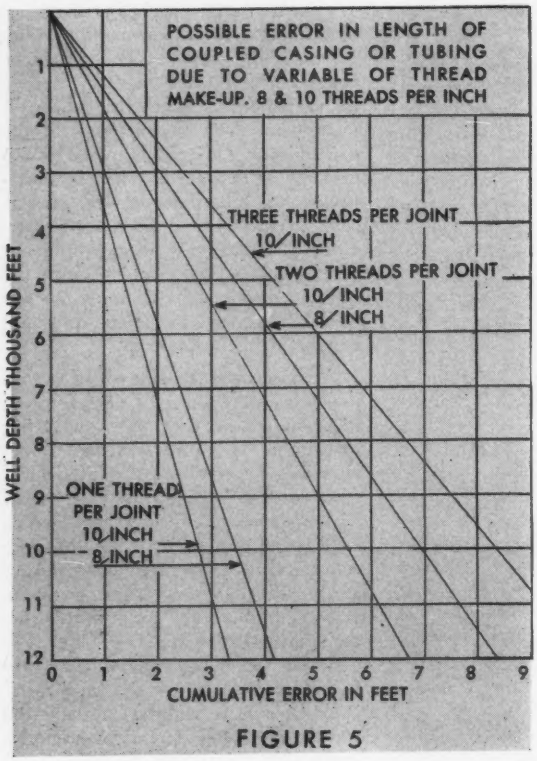

POSSIBLE ERROR IN LENGTH OF COUPLED CASING OR TUBING DUE TO VARIABLE OF THREAD MAKE-UP. 8 & 10 THREADS PER INCH
THREE THREADS PER JOINT 10/INCH
TWO THREADS PER JOINT 10/INCH 8/INCH
ONE THREAD PER JOINT 10 INCH 8 INCH
WELL DEPTH THOUSAND FEET
CUMULATIVE ERROR IN FEET
0 1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10 11 12

FIGURE 5

1. Thread make-up of tubing neglected.

2. Float plug drilled out accidentally and no hard bottom established.

3. Cement plug drilled with water which fails to wash out cuttings.

4. Plug drilled with undersize bit, leaving cement sheath on walls of pipe.

5. Plug not drilled but merely checked by tubing. Cementing plug caught in bit and pulled up the hole.

6. Well plugged back to a new total depth estimating this total depth from length of pipe left out of the string.

7. Measuring around the elevators with steel tape or suspending tape from elevators.

8. Original well zero not correctly used.

The measuring device employed with the portable steel measuring line was not designed for absolute accuracy but was designed as accurately as other contemporary measuring methods. The steel line passes around a grooved steel measuring wheel with a small ratio of feet per revolution. The actual length of line depends too much on the accurate diameter of the measuring wheel and the steel line used. The longer the device is in service, the more inaccurate it may become. If the wheel is designed to be used with a 0.060-in. diameter steel line a change to a 0.072-in. steel line may result in an error of three feet per thousand feet of well depth. If the measure wheel and line have worn to a very small degree, the error is multiplied by the depth of the well to give erroneous recordings. A total wear of only 0.005-in. results in an error of 1.3 ft. per thousand. At six thousand feet, this results in an error of nearly eight feet.

Although slippage is prevented by the design of the measuring device the measurement is made going in the hole and not coming out. Temperature elongation and stretch of the line could more nearly be compensated for if the measurements were made coming out from total depth to the surface. Recent developments have added a weight indicating device to the measuring device to add to the accuracy of checking the pick-up on bottom.

The common method of checking the steel line measuring device is to observe its reproduction of accurately measured pipe lengths. Another method used successfully is to keep a spare measuring head of known accuracy. The error of the regular measuring head is checked occasionally against measures established by the standard or spare measuring head.

The bailing or coring line is frequently used as a means of measuring total depth. The principal application is the "string-in" measurement, in which the measure from the wire line reel, over the sheave in the crown to the well head, is taken as the unit of measure. This type of measure can be made very accurately but in the hands of the inexperienced it can be just as inaccurate. A steel line is so constructed that it elongates by lay twisting beyond its normal length. Therefore, any string in or cable measure which includes that section from the crown block sheave to the hoist drum is apt to be erroneous. As the line is free to adjust itself to load conditions only in the suspended portion, all measurements should be made in that portion. The simplest unit is from the most convenient surface measure point to a board across the derrick below the crown sheave. Only when the line is well stretched and adjusted should a measure be made with it. Some of the common sources of error have been found to be:

1. Portion of line cut off for new bailer hitch or rope socket.

2. *Change in Weight of Tools Run.* When the line is measured and flagged with one weight of tools it is only accurate with that weight. Increased weight of tools will increase the length of the line.

3. *Change in Well Fluid Conditions.* The buoyancy of fluid acts the same as removing weight from the line. A line measured in a dry hole will shorten considerably when run in water or drilling mud.

4. *Permanent Stretch.* The length of a stranded steel cable increases gradually throughout its life. Service accidents such as stuck tools induce permanent stretching.

5. *Splicing.* When a damaged section is removed and the cable is spliced, all flags should be removed and the line remeasured.

The general rule to be followed to obtain accurate measurements with a bailing line is to remeasure at each stage of the operations where measurements are vital.

Most plug-back work starts accurately enough from the total-depth bench mark. However, this should be supplemented by a new measurement from the surface where possible. Errors are generally due to loss of a portion of the bottom of the well or to loss of original well records. It is important that plug-back measures be rechecked by accurate measures

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Cores: Conventional; every other ten feet.
Drilling Cost: $105,000.00

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WELL "B"

Location: South Louisiana
Date Drilled: 1941
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Cores: None—Electrically logged and side wall sampled by Schlumberger
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from the surface. Simply measuring the pipe removed from the well is not a fool-proof method of establishing a new total depth. Where the new measurements fail to check those computed from the pipe removed, the operator may employ the casing collar location method as a supplementary check. When the well records are lost, are indefinite, or are doubtful, the measurements may be reestablished by means of a Radioactivity Survey.

The various well service companies employ mechanical measuring devices and accurately calibrated flagged cables. It is possible in some cases to rely fully on the measurements made by service companies; but even with accurate measurements it is often impossible for a service company to overcome inaccurate well data completely. For example, an electrical log made before setting casing may be used as a basis for perforating an old well. At the time the log was made, the measurements were zeroed at the rotary drive bushings. Forgetting this point may result in using a much lower elevation on the workover derrick as the zero for the perforator. The obvious possibility is a wasted set of perforations.

One of the causes of ineffective service company measurements is the placing of full reliance on the fact that a certain line should duplicate its performance on subsequent runs. This fact is well founded but it provides no permanence. As with bailing and coring lines the cables used by service companies are subject to service accidents which affect their accuracy. Therefore, a cable should not be relied on entirely to determine the results to be obtained from a well. Prior to any perforating of casing the well should be cleaned with the largest possible size of rock bit and then thoroughly washed. Cement cuttings frequently settle back to bottom when the well is washed with water. Rubber, belting and other plug materials may remain in the well to prevent the perforator from reaching bottom. In some cases, the pump suction is lowered in the pit to permit a "dry trip" and the heavy viscous mud is pumped down in the well. The result may be a false bottom or bridge through which the gun perforator may not pass.

When the well is thoroughly clean the pipe should be carefully measured out of the hole. To inspire confidence in the measurement reproduced, the service company operator frequently determines total depth without previous knowledge of the pipe measurements. All he asks is certain definite information such as the measure method employed and fluid conditions of the well. This information is used to adjust his data to coincide with the well measure method and to compensate line stretch for buoyancy — a function of fluid density.

The permanence of the calibrated line measure system is well established by use of accurately measured test wells in which all cables are frequently checked and calibrated. A new cable thus reproduces measurements as accurately as a seasoned cable. Service accidents have no lasting effect as convenient test wells permit immediate recalibrations. As one operator put it, "All the work on a well leads up to the ultimate perforating of the casing for completion." When the well information is correct the completion results reflect the value of accurate measurements "from the grass roots down."

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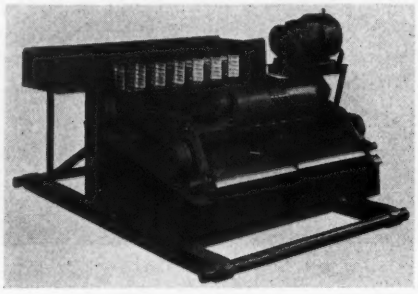

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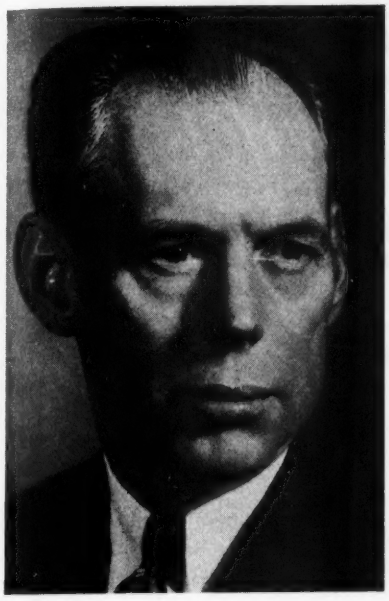
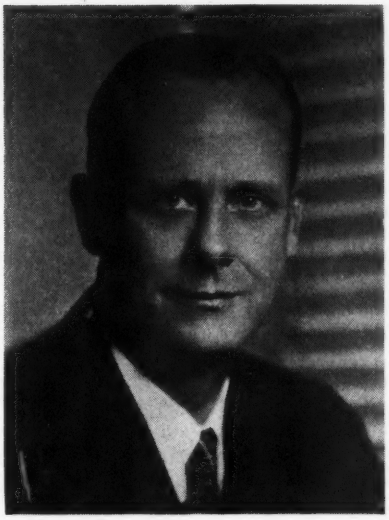


C. D. GARD
(Vice President and Chairman Advisory Committee)

At the annual meeting of the Board of Directors of California Natural Gasoline Association, held July 13, announcement was made that R. W. Heath, Signal Oil and Gas Company, has been elected president of that Association for the 1943-1944 term and that C. D. Gard, Union Oil Company of California, has been elected to the vice-presidency of the Association.

H. A. DRESSER
(Chairman Entertainment Committee)

In assuming his new office, Heath pointed to the fact that as one of the five major divisions of the petroleum industry which includes drilling and production, refining, sales and transportation, the natural gasoline industry is playing a tremendous role in the war effort. He stated that California natural gasoline plants, at the present time, are producing over 1,750,000 gallons of natural gasoline products per day, including over 200,000 gallons per day of the critical isobutane, so essential for the aviation gasoline program. As the technical society for

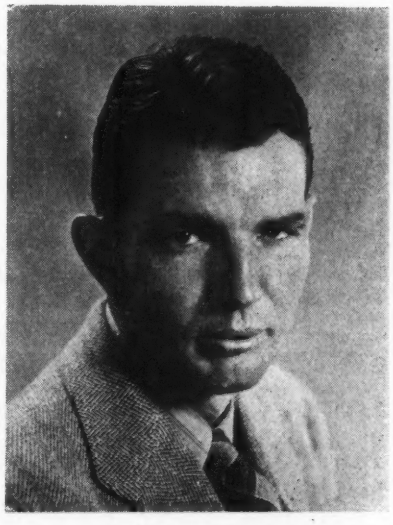


R. W. HEATH
(President)

this industry, the California Natural Gasoline Association will continue to conduct studies and research for the improvement of natural gas and natural gasoline test methods and procedures.

At the annual election, five new directors were elected. These include I. B. Funk, Cowan Oil and Refining Company; John C. Herron, Shell Oil Company, Inc.; W. L. Rifenberick, Industrial Engineers, Inc.; J. H. Sargent, Kettleman North Dome Association; and J. B. Taylor, Signal Oil and Gas Company. Committee chairmen appointed to serve are C. D. Gard, Union Oil Company of California, advisory committee; R. R. Crippen, The Texas Company, technical; Randal Maass, General Petroleum Corporation, fall meeting; Harold Saueressig, Southern California Gas Company, program; H. A. Dresser, The Fluor Corporation, Ltd., entertainment; L. W. Wilbern, Daniel Orifice Fitting Company, membership; John H. Kunkel, The Fluor Corporation, Ltd., public relations; and George McLaren, Standard Oil Company of California, finance and budget. George L. Tyler is secretary and treasurer.

GEO. L. TYLER
(Secretary-Treasurer)



HAROLD SAUERESSIG
(Chairman Program Committee)

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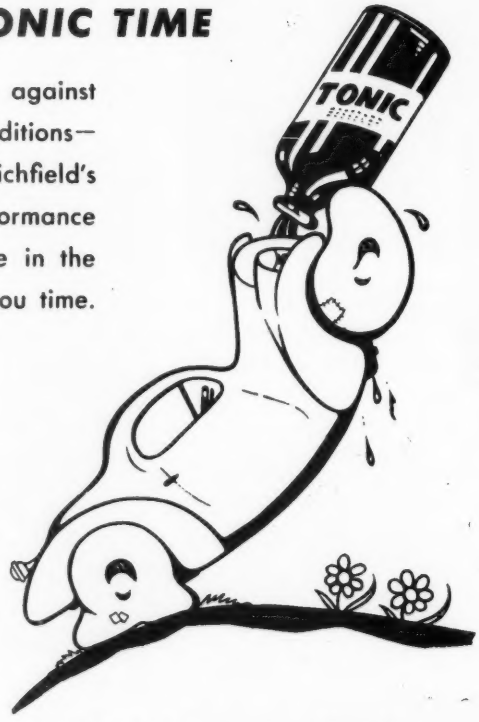

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Ickes Pleads for Governors' Help on Oil Crisis

America's governors were called upon by Petroleum Administrator Ickes "to help us in bringing about an understanding of oil in war—help us, I plead with you, to persuade everyone to understand that oil is precious, that it is, in fact, ammunition." Ickes' address was read for him at the annual Governors' Conference, June 21, by Deputy Petroleum Administrator Ralph K. Davies when the recurring coal dispute caused Ickes to remain in Washington. Ickes said he believed no one would take issue with him "if I base my remarks upon the proposition that this is an oil war and that it cannot be won without oil—oceans of it."

Ickes said East Coast areas for the duration of the war cannot expect any increase in petroleum products beyond essential requirements. Furthermore, he added, the increased flow of oil from other sections to the East indicates the possibilities of further gasoline restrictions in the Midwest. "As we drain more and more from the Midwest," he said, "it is quite possible—indeed, I would say probable—that the supplies in this section will decline to the point where consumption will have to be cut below the present level. When that time comes, we shall, without hesitation, recommend the imposition of such restrictions."

Supervisor Pay Troubles

Many oil companies are having trouble in not being able to appropriately increase pay of supervisory employees. Steps are being taken by P.I.W.C. and P.A.W. to remedy the situation, and Fred H. Harbison, P.A.W.'s labor counselor, is in charge of P.A.W.'s efforts.

The following release from Washington will explain the problem, and give all oil companies an opportunity to help:

Fred H. Harbison, PAW's labor counselor, wants to hear from oil companies about their troubles over pay increases to supervisory employees when extending work week to 48 hours.

Harbison wants to obtain as much concrete information from as many companies as possible so that appropriate action can be taken to clear up the situation. His address is Room 6640, Petroleum Administration for War, New Interior Building, Washington, D. C.

Already there has been one walkout of supervisors at a Gulf Coast refinery over the limitation on pay increases. Other companies face similar difficulties when the Internal Revenue Bureau acts on their pay increase proposals and allows a lesser increase than that being paid by nearby refineries.

Here is the situation: Under the 48-hour week order, employees subject to the Wage and Hour law are entitled to time and a half pay for each hour over 40 per week. But there was no provision for increasing pay of supervisory employees who are not subject to the Wage and Hour law.

Up until the "hold-the-line" order of April 8, it was possible to apply to Internal Revenue Bureau's salary stabilization unit for approval of pay increases to supervisors going to a 48-hour week (but only where required in certain areas of critical labor shortage).

A number of companies obtained approval for supervisors' pay increases prior to April 8. Others had applications pending, but unacted upon, on that date. Others have applied since.

One major company obtained approval and put into effect in February the following schedule for supervisors' increases in the 48-hour week areas:

Monthly Earnings	Rate of Increase	Monthly Earnings 48-Hour Week
Up to $300	30%	$390
$300-$450	$90 per mo. fixed	$390-$540
$450-$750	20% with $100 max.	$540-$750

Other companies had obtained approval prior to April 8 for similar pay increase plans.

For some weeks after April 8, the Internal Revenue Bureau wouldn't consider applications to increase pay of supervisory employees going on 48-hour week. In many cases, this meant that workers were getting more money than their bosses.

Finally, the IRB decided on a formula which would permit the same dollar increase as that given 25% of employees under the supervisor, with lesser amounts to upper bracket supervisors. This didn't work out because in some cases the 25% group was fairly well down the wage scale so that supervisor was still paid less. Then, the Revenue Bureau changed to following formula:

Supervisors in the first level may be increased by an amount equivalent to 80% of the differential existing between their pay and that of the highest paid "significant" group under them (not necessarily constituting 25% of the force supervised) existing before going to the 48-hour week. For example: If the wage rate of the "significant" group was $50 per week and raised to $60 for 48 hours, then the foremen, who were getting $60 for 40 hours, can be increased by $8 (80% of $10) to $68 for 48 hours. Next group of supervisors can be increased by 60% of the previously existing differential, and the third group, 40%. Above that level, it will be even less but IRB hasn't stated the amount, except to indicate that for those receiving more than $5000 the chances are slim for approved increases.

Pay increases may be made retroactive to date that employer applied for approval.

Plans for pay increases, approved prior to April 8, are to be left unchanged.

Trouble has arisen in some areas where there are several refineries and one plant obtained its supervisory pay increase before April 8, so it is able to pay a higher rate for identical work than other plants nearby.

Since the above mentioned 80-60-40 formula is understood to have been imposed by the Office of Economic Stabilization (Vinson succeeded Byrnes in this office), it may be that the matter may have to go

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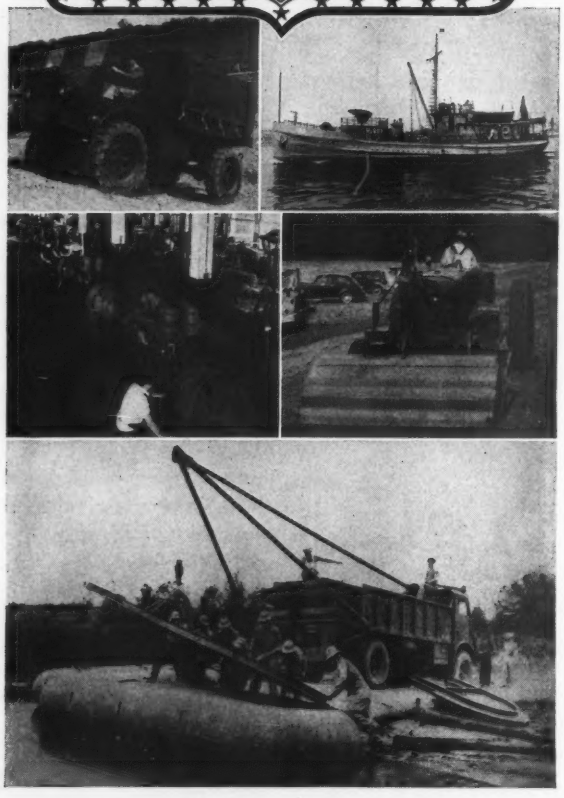

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to the White House before permission can be obtained for oil companies to raise their supervisors to same salary levels as those of companies which obtained approval of their pay increase plans prior to April 8.

PIWC Enlarges Five Committees

The Petroleum Industry War Council voted at its June meeting to authorize its chairman to increase the size of five of its functional standing committees from five members to nine. This action was taken to amplify committee activities, and to afford them a broader degree of representation in their respective fields of interest. Among the new members appointed, two were from California. C. P. Watson, vice-president, Seaboard Oil Co. of Delaware was appointed to the National Committee on Oil Production; and C. A. Johnson, president of the Socal Oil and Refining Company was appointed to the National Committee on Refining.

In commenting upon the expansion, Chairman Boyd said, "With a broader diversification of industry interests, the Council's committees should be able to attack with greater efficiency than ever before the multiplicity of vexatious problems which constantly confront our industry. In most instances the men I have named are identified officially with organized groups of oil men and they will bring to the committee deliberations a thoroughgoing knowledge of those problems with which the respective committees deal."

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Nomads Will Hold Annual Wing Ding On July 23rd

The Fourth Annual Wing Ding of the Los Angeles Chapter of Nomads will be held at the Riviera Country Club near Los Angeles during the afternoon and evening of Friday, July 23, 1943. As heretofore, the event will consist of a golf tournament, games of skill, dinner and a floor show. Also, as heretofore, the attendance will be Nomads, men from foreign countries and friends from the oil industry.

Nomads and guests competing in the golf tournament will tee off between 12 noon and 1 o'clock. Foursomes are already being formed but any who decide at the last minute can get into the tournament providing they get on the course early enough. Prizes for this event will be awarded at the dinner hour.

The games of skill will be played for stage money between 5 and 8 p.m. Each man will be given a supply of this money when he enters but he can replenish his supply by purchase if he loses what is given him free. During the dinner hour prizes will be awarded by auction and the stage money accumulated at the games of skill will be used to buy prizes.

The dinner hour will be an event in itself with the awarding of golf prizes, a door prize and the auctioning of the game prizes. The distribution of the prizes and the auctioneering will be done by the young lady who was mistress of ceremonies at last year's Wing Ding.

The stage show will be the final event of the evening. In addition to several mighty interesting dances by beautiful girls there will be an unusual sleight-of-hand, hypnotic, blind-fold reading act; three girl acrobats, a girl musical act with electric guitars, a comedy juggler, and a comedy act with pantomimics. The master of ceremonies will entertain throughout the show.

The Wing Ding is being handled by a committee consisting of the following men: Fred Tyler, chairman; Ernie Fowks, program manager; George Trembley, golf manager; Elmer Smith, in charge of prizes and finance; J. V. Robinson, in charge of games of skill; and Wallace Sawdon, in charge of entertainment.

Three General Electric Men Promoted

Effective July 1, 1943, three General Electric men in the company's Pacific District, were promoted, according to Mr. Raymond M. Alvord, commercial vice president. Mr. G. F. "Jeff" Maughmer, former manager of the Phoenix office, became assistant to the manager of the Pacific District, with headquarters in San Francisco. Mr. Loys Griswold of the Los Angeles office took over the managership of the Phoenix branch. Mr. Arthur D. Bragg of the San Francisco office was made assistant to the manager of the Los Angeles office.

Mr. Maughmer, a graduate of Washington State University, started with General Electric in 1923, taking the G. E. Test Course in Schenectady, N. Y. He spent several years in the Publicity Department there, where his duties included handling the advertising for the Central Station Division. "Jeff", as he is known to his associates, transferred to the company's Phoenix office in 1925, where, with the exception of seven years spent in the Los Angeles office, he has been located ever since. In 1939 he became manager of the Phoenix branch. In addition to his business duties, he found time to be active in local civic affairs. For his participation in certain phases of the construction of the Metropolitan Water District Colorado Aqueduct, Mr. Maughmer was awarded the coveted Coffin Award.

Mr. Griswold, who became manager of the Phoenix office, has been with the General Electric Company since graduating from the California Institute of Technology in 1924. After completing the company's Test Course in Schenectady, he worked with the International General Electric Company in New York. A short time later he requested a transfer to the General Electric Los Angeles office, where he has been working in the Industrial Division until the present time. Among the numerous interesting activities with which Mr. Griswold has been concerned is the development in testing model airplanes and working out power supply for model planes equipped with motors and propellors which duplicate the effect on a full-sized plane. The original equipment which he was instrumental in developing is one of the first to be installed and now operates at the Massachusetts Institute of Technology. Mr. Griswold is past president of the California Tech Alumni Association, a member of Tau Beta Pi, and has also been active for years with the Los Angeles Junior Chamber of Commerce. He is married and has two children, Richard 6, and James 10.

Mr. Bragg of the Central Station, Transportation Division, G. E. San Francisco office, is a graduate of Stanford University. He took the G. E. Test Course in 1925, working for 18 months in Schenectady, before transferring to the San Francisco office. Engineering and commercial work kept him busy in San Francisco until 1930, when he transferred to the G. E. Fresno office. "Art" worked with company customers in the "Valley" for 10 years. He was recalled to the San Francisco office in 1941 and has been handling special assignments until the present time. He is a member of the American Institute of Electrical Engineers and, as chairman of the San Francisco Electric Club, "Art" has done an outstanding job . . . one which the Los Angeles Electric Club will recognize now that he assumes his new position as assistant to the manager of the G. E. Los Angeles office.

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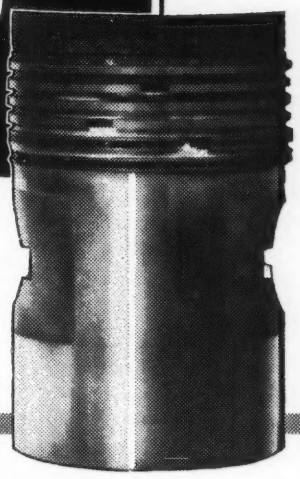

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Oil is Ammunition—Use it wisely!

B. F. McDonald Co. Issues Safety Catalog

Practically an enclyopedia of safety equipment is the new safety catalog and manual just released by B. F. McDonald Co., west coast manufacturers and distributors of industrial safety appliances. Covering the entire field of products designed to reduce industrial hazards, the manual is unique in that it is divided into sections for easy reference, and for convenience and economy in permitting the release of only those sections likely to be of interest to the safety engineer. Because industrial hazards vary widely with the nature of the industry, it was decided to arrange the material in the catalog so that the safety engineer at an oil refinery need not wade through material irrelevant to his field. The mine safety engineer, on the other hand, is confronted with problems of an entirely different nature, so that it is of no advantage to him to receive the material sent the oil man. And this situation, declares the McDonald Company, exists throughout the safety field, providing a condensed working catalog that saves time by eliminating unwanted items.

The complete McDonald Manual is divided into eight sections, each printed in distinctive colors. Successively these sections cover: (1) Head Protection, (2) Eye Protection, (3) Respiratory Protection, (4) First Aid, (5) Safety Clothing, (6) Gas Masks, (7) Safety Instruments, (8) Miscellaneous Safety Appliances.

Each section is headed by a table of contents and the complete manual is fully indexed and cross-indexed. It is copiously illustrated and bound in sturdy leatherette. Its standard 8½x11 inch size provides for easy filing.

Certain larger organizations, whose industrial ramifications cover practically every field of human endeavor, will require the complete manual for ready reference. Others, whose needs are more limited, require only those sections pertaining to problems existing in their fields. The McDonald Company invites inquiries regarding the new catalog. The address of the McDonald Co. is 1248 E. So. Hope St., Los Angeles 15, California.

Gold Star to Security

On July 11, 1943, the United State Maritime Commission honored the Security Engineering Co., Inc., Whittier, Calif., by presenting a gold star for continued meritorious production of vital war materials. The gold star award was preceded on October 15, last year, by the Maritime M Pennant.

Concluding the program, Mr. W. E. Sievers, Executive Vice-President of Security Engineering Co., Inc., presented a scroll containing 400 signatures to O. D. McLean, Assistant Director of Production of the U. S. Maritime Commission. The scroll was individually signed by Security officers and employees and pledged continuous all-out effort in filling U.S.M.C. contracts. Pictured are Nadine Hardgrave and Winifred Agney holding the scroll containing their signatures.

Cleaning out an old Huntington Beach Tar Zone well to check casing before redrilling presents plenty of problems to a production crew—note the piece of casing being sledged loose.

Field Development

Los Angeles Basin

Beach Jones Sand Again Produced

The Jones Sand in the Huntington Beach off-shore area is again flowing to the tanks. The latest completion is by Southwest Exploration Co., holder of development contracts for State of California oil producing tidelands. The new well, State No. J-10, is the company's second well in this horizon, but only the latest of many producers which the company has whipstocked under the sea. Although the property being produced is public domain the operating company refuses information concerning the development. According to the best information available the latest producer was bottomed at 3490 ft. and completed flowing through a small bean at a 300 bbl. per day rate. Its predecessor, No. J-9, is estimated by some to have flowed rates as high as 1000 bbls. per day although no figures have been released by the company.

Further down the coast strip, at 21st and Ocean Avenues, H. R. Hamilton, Operator, is rigging up for his first off-shore well in accordance with a State contract to develop from 21st to 8th Streets.

In the 5 Points area of the field recent completions are yet making a solid return with McVicar-Rood-McCallen's No. 3 pumping 104 B/D clean 20 gravity oil. Least encouraging of the wells in this section is Nicholai & Becker Oil Co.'s Fee No. 1 which pumps only an average 8 bbls. per day and may be deepened to the Lower Ashton Zone. First well to be abandoned in the current drilling program is D. D. Dunlap Oil Co. No. 20 southeast of Huntington Beach Blvd. and Garfield. This well bottomed at 3780 ft. after finding silty, tight oil sand in the interval 3755-43 ft. and abandoned. In all probability this well could have been made a small producer but since the area will be drained over the long term period by company wells it was considered inadvisable to expend steel stocks for a comparatively small oil return. It is thought the change in sands is a local condition and does not indicate field limits.

Wilmington Work Slowly Increasing

The Wilmington oilfield is receiving a slow increase in activity. Currently working in the field are fourteen strings with several more scheduled for an immediate start.

General Pet. Corp. is continuing its remedial program in the field with three wells now recompleting and Eubank Comm. No. 4 now pumping 126 B/D 15 gravity cutting 6.0%. Union Pacific Railroad Co. also is pursuing a large scale drilling program. Now working is No. 173 which is deepening through liner to the U. P. Zone from 3901 ft. and two grass root jobs, Nos. 219 and 220. Four additional jobs are to be started at once.

In the northwest field section Atlantic Oil Co., O. M. Slosson, Sam Bernstein, Cleveland Oil Co., Barnhart-Morrow, R & S Oil Co. and several others are completing plans for new wells.

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Aliso Canyon	Standard Oil Co., Frew	1-1	29, 3-16		Foundation
Chatsworth	Anderson-Prichard Oil Corp., APR	1	24, 2-17	1645	Abandoned
Del Valle	Standard Oil Co., N.L. & F.	3-1	19, 4-17		Grading
Las Llajas	Western Gulf Oil Co., Brady	1	13, 3-17	9610	Sidetracking
Montebello	Barnsdall Oil Co., Baldwin	1	11, 2-11		Foundation
	Cont. Oil Co., Baldwin	1	3, 2-11	4200	Drilling
Newhall	P. M. Girard, Fisher-Wosk	1	6, 3-16		Rigging up
Norwalk	Gen. Pet. Corp., H. B. Allen	1	12, 3-12		Location
Puente	Barry Oil Co., Inc., Rowland	1	14, 2-10	2423	Idle
	Hansen, Melvin, Dragna	1	24, 2-10	3222	Idle
	J. C. Drilling Co., Kelso	1	12, 2-10	2385	Fishing D.P.
	Lomi Oil Corp., John Rowland	1	14, 2-10	3246	Suspended
	McCartney, Chas. E. Hurley	1	4, 2-10	518	Drilling
	V. & F. Oil Co., Grazide	1	27, 2-10		Location
Rice Canyon	General Pet. Corp., Mendota	1	22, 3-16	721	Drilling
Rosecrans	Union Oil Co., Amestoy	1	18, 3-13	6894	Drilling
	Shell Oil Co., Inc., Bank	1	18, 3-13	6275	Drilling
Temescal	The Texas Co., Dominguez	57-1	1, 4-18	4424	Drilling
Whittier-La Habra	H. & C. Oil Co., Joyce	1	22, 2-11	5715	Drilling
	Los Nietos Valley O. Co., Woodward	1	29, 2-11	3565	Idle
	Orange County				
Newport Beach	Signal O. & G. Co., Willow Comm.	1	19, 6-10	3390	Drilling
	San Bernardino County				
Chino	Chino Hills Oil Co., Kraemer	1	33, 2-8		Location

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TWIN IGNITION—Two spark plugs in each cylinder, and two magneto ignition systems, for maximum power output, and continuity of operation.

DUAL CARBURETION—Assures quick, uniform distribution of fuel, and maximum power output.

EFFICIENT COOLING SYSTEM—Cooling water enters head where heat is greatest, insuring low temperature operation. Water-cooled exhaust manifold reduces fire hazard. High-capacity radiator, fan and water circulating pump for positive circulation.

QUICK STARTING—Drilling engines are equipped with a small gasoline engine for prompt starting. Complete with Bendix transmission.

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Long Beach Oil Development Co. is in the final phase of its current drilling program with an additional eight wells scheduled for the next three months. Latest to the tanks was Z-1-1-Z at 3000 ft. for 225 bbls. of clean 18 gravity oil and 130 MCF gas and W No. 47 at 3418 ft. for 284 bbls. of 16 gravity oil and 25 MCF gas.

Newhall Test Now Under Way

In the Newhall area P. M. Girard is drilling Fisher-Work No. 1 as a try for Modelo production south of the Newhall-Potrero field. Located on sec. 6-3n-16w the new wildcat is near the old Aztec Oil Co. well which drilled to 6113 ft. and tested electric log showings without success. The well is considered by many to have stopped short of the Newhall-Potrero zones.

Chatsworth Try on Hook

Anderson-Prichard Oil Co.'s test on sec. 24-2n-17w near the Chatsworth Reservoir is abandoned in hard Cretaceous shale at 1645 ft. The heavy stuff was drilled from the upper section of the hole making further drilling useless. The company is reported planning a second test of the area to be put down southeast of the reservoir.

Rice Canyon Well Drilling

General Petroleum Corp.'s Mendota No. 1, on sec. 22-3n-16w, southeast of the old Rice Canyon field, is making slow progress at 721 ft. The well is hampered by poor circulation. The expectation is to core and drill to modest depth and log the upper strata before utilizing any pipe in the wildcat.

Puente Hills Work Slows

Activity in the Puente area is slowing. With only two strings at work the area has thus far failed to produce the oil and activity suggested by showings in the now idle and apparently unsuccessful Barry Oil Co. Billy Rowland No. 1 on sec. 14-2s-10w. To the northeast, on section 12, J. C. Drilling Co. is fishing old drill pipe in the old 2385 ft. Kelso No. 1 with the intention of testing showings found in the old drilling. Currently working is Chas. E. McCartney's Hurley No. 1 on section 4 of the township. Last reported in boulders at 514 ft. the try cemented 10¾ in. surface casing at 245 ft. Recently suspended in the district was Lomi Oil Corp.'s John Rowland No. 1 on section 14 which was hung up at 3246 ft. without having encountered showings. The operator is considering another test on its large leased acreage.

Las Llajas "Cat" Sidetracks Fish

Western Gulf Oil Co.'s Brady Estates No. 1, sec. 13-3n-17w, is sidetracking a drill pipe fish from 7809 ft. located some two miles south of the old Pico Canyon field the deep try had reached 9610 ft. before twisting off an unrecoverable fish. No showings have been reported to this depth.

Temescal Try Running Log

The Texas Co.'s Temescal No. 1, on sec. 1-4n-18w southwest of the Oak Canyon field, bottomed at 4424 ft. to run an electric log after losing circulation. The test is drilling the easterly plunge of the Temescal field structure which produces heavily to the west.

Newport Beach Wildcat Drills

Signal Oil & Gas Co.'s Willow Community No. 1, on the west bank of the Santa Ana River north of the Coast Highway, is spot coring and drilling brown shale at 3390 ft. The project appears to have missed the sands from which Walt Elliott's well produces at 2400 ft. on the easterly river bank. No authentic formation data has been released by the company.

East Coyote Work Proceeds

Activity in the East Coyote field continues at a steady pace with several strings at work. In the westerly section of the field Bartholomae Oil Corp. is testing water shut-off on Stearns No. 13 at 4475 ft., is drilling No. 14 at 1395 ft. and is grading site for No. 15, all in sec. 22-3s-10w.

To the east Graham Loftus Oil Corp. continues its field operations with two wells at work. The company's Perkins No. P-5 is running water witch before plugging after the well pumped wet at 3690 ft. Last gauged production was 10 B/D 17 gravity cutting 94.0% water. No. P-6 is rigging pump after effecting a shut off on a tapered string cemented at 4175 ft. The company recently opened both zones in No. P-4 and was last reported pumping a 150 bbl. clean daily rate of 18 gravity oil from 4364 ft.

On section 13 of the township Severns Drilling Co. cemented blank 6⅝ in. casing at 4323 ft. and cp'd. at 545 ft. to gun perforate No. C-2 in the upper oil sand interval 3500 to 3615 ft. On adjacent acreage Hathaway Co. moved in material for Anaheim Union Water Co. No. 7 after receiving permission to drill three wells. Also next to the Severns well is The Petroleum Co. Gilman No. 1 which is cleaning out to work over and recomplete.

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Coastal District

Standard Ready For Fillmore Try

Standard Oil Co. is preparing to spud Fillmore Community No. 2-1 for a deep try on sec. 24-4n-20w. This is the forerunner of an intended series of wells to check all possibilities of production trapped under faults known to exist in the area.

Shell Redrilling Rincon Outpost

Shell Oil Co., Inc., is redrilling northwesterly at 6466 ft. in its test hole at the north flank of the Rincon field. The well, Tomson No. 1, was drilled to an unfruitful 9704 ft. as a straight hole near the center of sec. 8-3n-24w.

In the field area C.C.M.O. Co. recompleted No. B-25 on gas lift at 4600 ft. for 100 bbls. of 30 gravity oil daily and is rigging up to redrill both No. B-21 and its 9337 ft. No. C-9. The company also proposes to start three new grass root jobs at once with No. B-46 to lead off.

On the Whitten Permit pier Honolulu Oil Corp. is still squeezing to shut off water in its 3252 ft. No. 56-5.

Texaco to Start Shiells Canyon Job

The Texas Co. poured foundation for No. 141 on sec. 4-3n-19w at Shiells Canyon. Only other recent work here was Seaboard Oil Co.'s Seaboard-Calumet No. 1 which deepened into the Elkins zone to 3382 ft. on section 10 for a pumped return of 30 bbls. of 34 gravity oil cutting an average 30.0%.

Cat Canyon Job Withdrawn

Standard Oil Co. cancelled its proposal to drill Los Flores No. 6 in the Cat Canyon area of Santa Barbara county and quitclaimed all of the property excepting that surrounding producing wells.

On sec. 36-9n-33w in the area Pacific Western Oil Corp. is testing water shut off on a combination string of 7 in. casing landed on bottom at 5550 ft. The chert zone to be taken was found from 4920 ft. to bottom. Also in the section is Union Oil Co.'s Bell No. 17 last reported in chert at 5549 ft. after entering Miocene at 4589 ft.

Conoco To Test Piru Area Well

Continental Oil Co.'s second Holser well in the Piru area is being readied for trial. Located on sec. 14-4n-18w the well bottomed at 7979 ft. and cemented 5½ in. casing at 7815 ft. The operators expect to clean out and test oil sands cored in the open hole interval 7902-30 ft. of 7854-82 ft. before plugging and gun perforating upper sands.

In the same section Standard Oil Co.'s Crestmont No. 1 is drilling ahead at 3042 ft. for a further look at the deep horizons. In the Temescal field on section 4 Pacific Western Oil Corp. is deepening below normal horizons in the field at 7634 ft. in search of deeper production. No findings are reported on this well.

North County Well Hits Gas

Activity in the gas producing Northern California counties was again rewarded when Amerada Pet. Corp.'s wildcat Capital Co. No. 1 on sec. 36-5n-5e in the Thornton area of Sacramento county blew an estimated six and one half million cubic feet of gas on a formation test of the Capay sands. Bottomed at a barren 8367 ft. the well was plugged to 3390 ft. for the successful trial. Casing is now in the hole for a normal completion in the interval 3355 to 3380 ft.

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
	Santa Barbara County				
Casmalia	O.C. Field Gas. Corp., Arellanes	1-F	13, 9-35	968	Drilling
Gato Ridge	General Pet. Corp., Wickenden	2	24, 8-32	5189	Bailing
Lompoc	Alphonzo E. Bell Corp., Lompoc	7	28, 8-34	1643	Drilling
Los Olivos	Hub Oil Co., La Laguna	1	7, 7-30		Rigging up
Purisima Hills	Whittier Assoc., Barham	1	11, 7-32	2901	Drilling
Tinaquaic	Union Oil Co., Sisquoc C. H.	1	31, 9-31		Rigging up
	Ventura County				
Bardsdale	San Marino Oil Co., Elkins	1	7, 3-19		Rig
Conejo	L. A. Basin Oil Co., Well	1	4, 1-20	1746	Idle
Eureka Canyon	El Rika Oil Co., Well	4	33, 4-18	463	Rig pump
Fillmore	Standard O. Co., Fillmore Comm.	2-1	24, 4-20		Prep. to spud
Oxnard	E. F. Delaney, Todd	1	6, 1-21		Location
Piru	Continental Oil Co., Holser	2	14, 4-18	7979	Testing
	Delroy Pet. Corp., Lisk	3	22, 5-18	2808	Idle
	Pac. West. O. Corp., Temescal	14	4, 4-18	7634	Drilling
	Standard Oil Co., Crestmont	1	14, 4-18	3042	Drilling
Rincon	Shell Oil Co., Inc., Tomson	1	8, 3-24	9704	Redrilling
Sespe	Volunteer Pet. Co., Tar Creek	3	28, 5-19	780	Reaming
South Mt.	F. E. Fairfield, S. M.	1	19, 3-20	2750	Rigging up
Timber Canyon	A. T. Dennison, Well	1	13, 4-21	2202	Bailing
Torrey Canyon	Union Oil Co., Torrey	60	5, 3-18	1501	Drilling

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Contra Costa	Cal-Bay Corp., Faria	1	21, 2n-1w	196	Drilling
	Standard Oil Co., Keller	1	26, 2n-1e	1729	Drilling
	Trico O. & G., Trico-Signal	1	4, 2n-3e	2775	Drilling
Glenn	Superior Oil Co., Dodge Land	2	7, 19n-1e	4975	Drilling
Monterey	Columbia Oil Co., Vierra	1	7, 13s-2e		Rig
	Royalty Service Corp., Federal	1	21, 24s-10e		Bldg. rig
Sacramento	Amerada Pet. Corp., Capital Co.	1	36, 5n-5e	8367	Completing
	Jergins Oil Co., McCormack	1	30, 5n-5e	5704	Testing
San Joaquin	Amerada Pet. Corp., Comm	7-1	7, 4n-7e		Grade
	Amerada Pet. Corp., Comm.	15-1	15, 4n-7e		Location
	Amerada Pet. Corp., Comm.	16-1	16, 4n-7e		Equipment
	Bankline Oil Co., Comm	22A-1	22, 4n-7e	2725	Abandoned
	Standard Oil Co., Holt Comm.	1	15, 1n-5e		Grade
Solano	Standard Oil Co., Honker Comm.	1A	25, 3n-1w	1265	Drilling
	Standard Oil Co., Suisun Comm.	3	5, 3n-1w		Location
Sutter	Shell Oil Co., Inc., Buttes Comm.	1	2, 15n-1e	2016	Drilling
Tehama	The Texas Co., Walbridge	1A	32, 28n-2w	1544	Testing

On section 30 of the same township Jergins Oil Co. McCormack No. 1 is standing with 4½ in. casing cemented at 4380 ft. The well will be gun perforated for trial of the 9-1, Ione and Capay gas sands cored on the way down.

In the Lodi area of San Joaquin county where gas in great volume has recently been found Bankline Oil Co.'s Community No. 22A-1 failed to find production. Located on sec. 22-4n-7e the well bottomed and abandoned at 2725 ft. after finding no gas in the 9-1 and Capay sand phases. Amerada Pet. Corp. which discovered the producing area is readying to drill on sections 7, 15 & 16 of the township.

Many other wells are going down in several portions of Northern California in search of the gas returns which so richly reward the discoverer.

In the Rio Vista Gas field Standard Oil Co.-The Texas Co. Midland Fee No. 5 was last reported at 4669 ft. after a test of the interval 4462-4553 ft. flowed 6,200,000 cu. ft. of gas and the interval 4556-4669 ft. yielded a 7,000,00 cu. ft. gas blow.

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Casmalia Well Now Under Way

O. C. Field Gasoline Corp. is under way with Arellanes No. 1-F on sec. 13-9n-35w. Currently drilling at 968 ft. the test lies north of the Casmalia field limits.

Two Scheduled For South Mt.

Two wells will soon be under way in the South Mountain field area of Ventura county. First will be F. E. Fairfield's S. M. No. 1 which is rigging up on sec. 19-3n-20w to deepen from present depth of 2750 ft. The other activity is a projected wildcat by V. R. G. Wilbur on newly acquired acreage in the area.

East Purisima Hills Wildcat Shows Promise

Whittier Associates Barham No. 1 on sec. 11-7n-32w near Los Alamos was last reported in Chert showing oil in the fractures at 2901 ft. With the Miocene entered at 2472 ft. the well is reported to be progressively better toward bottom. A few shows unworthy of trial were cored in the Sisquoc below 1500 ft. Although the well has been tested at 100 ft. intervals in the lower section, owing to mechanical difficulties the results have been inconclusive.

Field observers report that the section appears comparable to that in the Lompoc field and if true substantial production may be expected.

Union To Core At Tinaquaic

Union Oil Co. is rigging up a portable outfit to core the Sisquoc Ranch holdings on sec. 31-9n-31w in Santa Barbara county. No drilling has been done in the immediate vicinity of the projected corehole.

Gato Ridge Try Bails Heavy Tar

General Pet. Corp.'s latest try in the East Gato Ridge area, Wickenden No. 2 on sec. 24-8n-32w, is bailing 4.5 gravity tar from plugged depth of 4125 ft. Bailed down to 1600 ft. the tar began to enter and the fluid level was last reported standing at 420 ft. Some idea of the difficulties in bailing this type of oil may be found in the report that it requires some 45 minutes for a 30 ft. bailer to sink in for a load and more than twice that time to dump the heavy tar. The operators may enter with tools to more quickly clean out for additional checks of entry rates.

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San Joaquin Valley

Guijarral Hills Work Continuing

Drilling in the newly discovered Guijarral Hills, south of the Coalinga Eocene Pool of Fresno county, is yet under way. Standard Oil Co., discoverer of the production, is drilling Pleasant Valley No. 28-21F in oil sand at 8999 ft. atfer entering the sand body at 8979 ft. This well, located northeast of the first well, is Standard's third try in the area. Its second was put down due west of the initial well and missed the shoreline accumulation.

Robert S. Lytle's well No. 86-20F is drilling at 5889 ft. on a line due north from the discovery well. This is Lytle's second well in the area with his first successfully completed one location north of the discovery well.

Raisin City Test Working

Seaboard Oil Co. is drilling a joint test near the center of sec. 14-15s-17e a mile west of the Raisin City field. The try, No. 53-14, was last reported at 3906 ft. and is shared by Seaboard, Tide Water Associated and Union Oil Co.

McVan Well Now on Pump

Pacific Western Oil Corp.'s Enas Fee on sec. 21-27s-27e in the McVan area is pumping from plugged depth of 2170 ft. Brought in for an initial of 82 bbls. in 12 hours the well after 11 days was making 29 bbls. of 12.3 gravity oil cutting 7.0%.

New Paloma Try Nears Objective

Western Gulf Oil Co. L. A. Club No. 36-1 on sec. 1-32s-26e at the easterly edge of the Paloma field is drilling in hard shale at 10,921 ft. Running some 300 ft. lower than previous field producers, the well should be nearing the Symons sand zone if production is to be found.

Work Scheduled For Devils Den

Pacific Oil & Gas Development Co. is preparing to drill three wells on its acreage in the Devils Den field of Kern county. Most recent work in the area was Etienne Lang's Occidental No. 3-SW-29 on sec. 29-26s-19e. This well bottomed in Santos shale at 4215 ft. and abandoned without trial.

Coalinga Field Work Continues

The Standard Oil Co., The Texas Co., Tide Water Assoc. Oil Co. and Shell Oil Co., Inc., are continuing a long term development program in this field. In addition to these strings two projects are newly projected. Of the new wells first under way is Fresno Oil Investments, Inc., which is drilling in grass root stages near the east quarter corner of sec. 20-19s-15e in the northerly field section. Next will be Union Oil Co.'s Coalinga Four No. 1 which will seek production between pools near the northwest corner of sec. 4-20s-15e.

Two Work At Coles Levee

Richfield Oil Corp. is rigging up to deepen KCL No. A-63-29 on sec. 29-30s-25e in the Coles Levee field. This well bottomed at 9125 ft. in poor oil sand which failed to produce and has been idle since late last year. The other work scheduled for the field is a Stevens zone test on sec. 5-31s-25e by Standard Oil Co.

Greeley Well Completed

Superior Oil Co. completed Lewis No. 1 on sec. 12-29s-25e at the northerly end of the Greeley field. Bottomed in oil sand at 11,453 ft. after topping the Rio Bravo sand at 11,404 ft. the well was put on flowing a 1507 bbl. daily rate clean 37.4 gravity oil through a 28/64 in. bean. With the bean further reduced the well was last reported flowing 1074 bbls. daily.

Standard Oil Co. is running three strings in the field. KCL No. 11-38 is in brown shale at 8740 ft. while at the southeast field flank Wegis Comm. No. 1 is drilling in gray shale at 5166 ft. Southwest of production where Standard effected 4000 bbl. production in KCL No. 12-6 only to have it turn to water, the company is deepening from the former depth of 11,942 ft. at 12,020 ft. in gray sand and siltstone.

SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
	Fresno County				
Huron	G. P.-Pure Oil Co., Sopac	81-9	9, 17-17	8311	Drilling
Jacalitos	Standard Oil Co., Well	67-17E	17, 21-15		Rig
Guijarral Hills	Standard Oil Co., P.V.	28-21F	21, 20-16	8999	Drilling
	R. S. Lytle, Well	86-20F	20, 20-16	5889	Drilling
Raisin City	Seaboard Oil Corp., S.T.U.	53-14	14, 15-17	3906	Drilling
	Kern County				
Belridge—South	Petromont Oil Corp., C.H.	1	25, 28-20		Location
Buttonwillow	The Texas Co., Bowerbank U.	3-8C	8, 29-24		Prep. to spud
Comanche Point	T. W. Burnham, Chiquita	2	34, 12-19	1972	Idle
Cymric	Honolulu O. Corp., Fitzgerald	32B-26	26, 29-21	3953	Bailing
		42A-26	26, 29-21	1265	Drilling
Dyer Creek	D. D. Dunlap, Dyer Creek	1	11, 26-27	2308	Pumping
Devils Den	Etienne Lang, Occidental	3-SW-29	29, 26-19	4215	Abandoned
Elk Hills	Pac. West'n & G.F. Getty, McNeil	1	22, 30-24		Location
Grapevine	Richfield Oil Corp., Tejon	4	34, 11-19	1293	Drilling
Kern Front	Kern Front Drlg. Co., U. S.	1	10, 28-27		Location
Kern River	R. M. Kiesau, Opr., Kiesau	1	24, 28-28	2415	Abandoned
McClung	Continental Oil Co., KCL	G-1	4, 30-26	2486	Drilling
McKittrick	Haddock, T.J. & J.E., Akern	1	24, 29-20	2644	Suspended
	Standard Oil Co., Well	89-7	7, 30-22	1626	Drilling
McVan	Pac. Western Oil Corp., Enas Fee	6	21, 27-27	3257	Pumping
Round Mt.	Gen. Pet. Corp., Bradford	1	15, 28-28	2995	Abandoned
	Harp & Brown, Olcese	1	17, 28-29	1010	Drilling
	Palomar Ref. Co., Russell	1	6, 28-29	1777	Abandoned
	Kings County				
Hanford	The Texas Co., Souza	14-33	33, 17-22	4761	Drilling

Midway Well Makes Gas Flow

Exeter Oil Co. Murphy No. 1 on sec. 28-32s-24e in the Midway-Sunset field deepened first to 3162 ft. where production could not be effected and redeepened to 3212 ft. for a surprise yield of gas. At last report with the returns increasing the well was making 23 bbls. of good oil and 500 MCF gas.

C.C.M.O. Co.'s well No. 79-6, near the Republic Pool on sec. 6-32s-23e, which came in at 3452 ft. flowing 475 bbls. daily through a 20/64 in. bean is now making 220 bbls. of clean 21 gravity oil and 103 MCF gas through a 12/64 in. bean.

Activity levels in this field remain high with results varying from indifferent to good. Among the more substantial pumpers newly completed is Richfield Oil Corp.'s Fairfield No. 11 on sec. 11-31s-22e which is making 172 bbls. of clean 16 gravity oil from plugged depth of 1300 ft.

Rio Bravo Well Recompleted

General Pet. Corp. Caldwell No. 1 on sec. 35-28s-25e in the Rio Bravo field is recompleted at plugged depth of 11,470 ft. flowing 309 bbls. of 36 gravity oil through a 13/64 in. bean with the cut reduced from an initial 50% to 24.0%. Superior Oil Co. has rig up for Osborne No. 3-4 on section 28 of the township.

Huron Joint Try Drills Kreyenhagen

Two miles southwest of the Helm field in the Huron area the joint General Pet. Corp.-Pure Oil Co. Sopac No. 81-9 is drilling in Kreyenhagen shale at 8311' after entering the age at 8010 ft. Located in sec. 9-17s-17e the well is much lower than the field which finds the Kreyenhagen near 7600 ft. The try is higher than The Texas Co. Loescher No. 1 some three miles to the west. This well found Kreyenhagen at 8250 ft. and drilled to a barren 9613 ft. after placing the Eocene at 8930 ft. and Cretaceous at 9568 ft.

Round Mountain Wildcats Quit

Two projects in the Round Mountain area of Kern County have failed. First abandoned was Palomar Refining Co.'s Russell No. 1 on sec. 6-28s-29e which went on the hook in Walker siltstone at 1777 ft. Next to quit was General Pet. Corp.'s Bradford No. 1 which sought a fault accumulation on sec. 15-28s-28e. This well bottomed in gray sand at 2995 ft. after finding the barren Vedder at 2683 ft. and the lower Vedder at 2935 ft.

Yet working in the area is Harp & Brown's Olcese No. 1 on sec. 17-28s-29e. This well lost and recovered a drill pipe fish and is cleaning out to resume from present bottom of 1010 ft. in siltstone.

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Rationing

As we understand it and basing what we have to say on sources that claim to be official, though no responsibility is assumed for errors of any sort, the situation, as of now, is as follows:

On a date in the near future which we will here call the 20th, which will be changed later on to the 24th, holders of sugar books who drive under 20 miles an hour will be able to eat two cups of coffee for breakfast. Mileage Book A, entitling the holder to four gallons a week, should be brought to a recapping station and the blue insert changed to pink. If your book already has a pink insert, look on the underside of the letter X. If the X is there take note that there still must be a change to the unmarked pink but not until two days later.

Holders of the new all-purpose ration books are to turn to Page 9. If the birthday of their oldest child is in the summer then extra mileage will be allowed on page four, but no other, and if the school teacher who issued the coffee ration book was a blonde then the registration date will be postponed for another week.

Special application forms are provided for the use of groups. If you are in one of these you should have the D book. You can learn whether or not you are entitled to one by making application when you are out of sugar and have no coffee hidden in the attic. In that case your mileage on book C was up last week and the registration will be postponed to a date that will be announced in a fireside chat.

If you have no radio ask for a rain check and choose the nearest exit. If coffee keeps you awake it will be necessary to register and apply for an increased allowance. For this the date is the 19th, to be postponed for one week and if you are hoarding, you are to have no meat until your D card is gone.

P.S. Since the foregoing was written, the date has been changed to the 13th, after which the B card will be good for twice as much.

And then there was the sailor who was trying a breast stroke and got slapped down by a wave.

A rustic had been hit in the eye by a golf ball while crossing the links. He ran, raging towards his assailant, shouting: "This'll cost you foive pounds, foive pounds I want."

"But my good man," explained the golfer, "I called out 'Fore!' as loud as ever I could!"

Rustic (greatly mollified): "Did yer, guv'nor? Well, I didn't 'ear yer. I'll take four."

John and George, small sons of a Baptist minister, after listening to one of their father's sermons, decided that they must baptize their family of cats. The kittens made no objection. One by one they were put in a big tub of water.

But when it came to the mother cat, she rebelled—and fought—and scratched—until at last John remarked:

"Just sprinkle her, George, and let her go to hell."

"For a nickel would you let me kiss you?"

"Uh-huh."

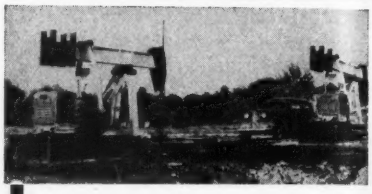
"Now, for a dime would you let me give you a hug?"

"Uh-huh."

"Now—are you ready for the two dollar question?"

Mrs. Old-Timer—"It says here in the paper that the young girls today are abandoning all restrictions."

Mr. Old-Timer—"Well, I'd better not catch Mabel without hers on."



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